United States Court of Appeals
for the
District of Columbia Circuit

TRANSCRIPT OF RECORD

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United States Court of Appeals for the District of Columbia

APRIL TERM, 1934

No. 6281 590

METROPOLITAN ENGINEERING COMPANY,
APPELLANT,

vs.

CONWAY P. COE, COMMISSIONER OF PATENTS.

APPEAL FROM THE SUPREME COURT OF THE DISTRICT OF COLUMBIA.

FILED AUGUST 9, 1934.

PRINTED SEPTEMBER 14, 1934.

United States Court of Appeals for the District of Columbia

APRIL TERM, 1934.

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METROPOLITAN ENGINEERING COMPANY,
APPELLANT,

vs.

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APPELLEE.

APPEAL FROM THE SUPREME COURT OF THE DISTRICT OF COLUMBIA.

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JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., AUGUST 31, 1934.

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United States Court of Appeals for the District of Columbia

No. 6281.

Metropolitan Engineering Company, Appellant,
vs.
Conway P. Coe, Commissioner of Patents.

a Supreme Court of the District of Columbia.

In Equity.

No. 53944.

Metropolitan Engineering Company, Plaintiff,
vs.
Thomas E. Robertson, Commissioner of Patents,
Defendant.

United States of America,
District of Columbia, ss:

Be it remembered, That in the Supreme Court of the District of Columbia, at the City of Washington, in said District, at the times hereinafter mentioned, the following papers were filed and proceedings had, in the above-entitled cause, to wit:

1 *Bill of Complaint to Issue Patent.*

Filed January 25, 1932.

In the Supreme Court of the District of Columbia.

In Equity.

No. 53944.

Metropolitan Engineering Company, Plaintiff,
vs.
Thomas E. Robertson, Commissioner of Patents,
Defendant.

To the Supreme Court of the District of Columbia:

The plaintiff states as follows:

I. The plaintiff, Metropolitan Engineering Company, is a corporation of the State of New York, located at 1250

Atlantic Avenue, Brooklyn, New York, and brings this suit as assignee of Thomas E. Murray, Jr.

II. The defendant, Thomas E. Robertson, is the Commissioner of Patents of the United States, (whose official residence is in Washington, in the District of Columbia), and is sued as the Commissioner of Patents of the United States.

III. This Bill is filed in accordance with the provisions of Section 4915 of the Revised Statutes of the United States, as amended, (44 Stat. L., 1335).

IV. Thomas E. Murray, Jr., on the 27th day of December, 1929, filed in the United States Patent Office an application for patent for certain improvements in Manufacture of Automobile Frames under and in accordance with the Statutes of the United States and the Rules of Practice of the United States Patent Office in such cases made and provided, which application was given Serial Number 416,988.

V. The said application was duly prosecuted and in compliance with said Statutes and Rules and was passed
2 upon by the Primary Examiner who finally rejected
and refused claims 1 to 14 inclusive thereof reading as follows:

"1. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

"2. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded to the faces of the vertical portions and to the edges of the horizontal portions of said longitudinal members.

"3. A frame for automobiles having members of sheet metal bent to form flanges, in combination with a bracket of sheet metal having edges butt-welded to the edges of said flanges.

"4. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having portions in the plane of the flanges of said longitudinal members and butt-welded edge-to-edge thereto.

"5. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with horizontal flanges extending inward, and transverse having vertical edges butt-welded to the inner faces of the vertical portions of said channels, and having horizontal portions in the plane of the flanges of said channels and butt-welded edge to edge thereto."

"6. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with horizontal flanges extending inward, and transverse braces having horizontal portions in the plane of the flanges of said longitudinal members, the ends of said horizontal portions abutting against the inner edges of said flanges.

"7. A frame for automobiles having longitudinal members the cross section of each of which is composed of a single piece of metal of hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

"8. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of metal of hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded in the faces of the vertical portions and to the edges of the horizontal portions of said longitudinal members.

3 "9. A frame for automobiles having members with flanges in combination with a bracket having edges butt-welded to the edges of said flanges.

"10. A frame for automobiles having longitudinal members with inwardly projecting horizontal flanges at the upper edge and having transverse braces with horizontal flanges in the plane of the said horizontal flanges of the longitudinal members and butt-welded edge-to-edge thereto.

"11. A frame for automobiles having longitudinal members with inwardly projecting horizontal flanges at the upper and lower edges and having transverse braces with horizontal flanges located respectively in the planes of the horizontal flanges of the longitudinal members and butt-welded edge-to-edge thereto.

"12. A frame for automobiles having longitudinal members, the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and having a transverse brace located at an intermediate point in the length of the frame, said brace having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto."

"13. A frame for automobiles having longitudinal members the cross-section of each of which is of channel shape with the flanges extending inward and having a transverse brace located at an intermediate point in the length of the frame, said brace having portions in the plane of the flanges of said longitudinal members and butt-welded edge-to-edge thereto.

"14. A frame for automobiles having longitudinal members, the cross-section of each of which is composed of a single piece of metal of hollow shape with horizontal portions and having a transverse brace located at an intermediate point in the length of the frame, said transverse brace having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto."

VI. That on the 16th day of April, 1930, said Thomas E. Murray, Jr., assigned the said application to Metropolitan Engineering Company, which assignment was recorded April 23, 1930, in Liber R-143, page 533 of Transfers of Patents, as by said assignment or a duly authenticated copy thereof here in Court to be produced will more fully and at large appear. And the entire right, title and interest in and to said application Serial No. 416,988 so conveyed now remains vested in the plaintiff.

4 VII. After said final rejection and refusal of said claims by the Primary Examiner, the said plaintiff appealed from the decision to the Board of Appeals who, on the 27th day of July, 1931, affirmed the decision of said Primary Examiner.

VIII. The grounds of rejection urged by the Primary Examiner and by the Board of Appeals against the allowance to plaintiff of said rejected claims 1 to 14 inclusive, were—

(1) The non-patentability of said claims in view of certain prior United States patents, to wit:

Klopp, 1,149,069, Aug. 3, 1915;
Schmidt, 924,941, June 15, 1909;
Chesnutt, 991,137, May 2, 1911.

IX. That in view of the said decision of the Board of Appeals, the defendant, Thomas E. Robertson, Commissioner of Patents, has refused and still refuses to allow the said claims 1 to 14 inclusive, of said application, which claims plaintiff has insisted and still insists are allowable and patentable to it.

X. That no appeal has been taken from the decision of said Board of Appeals to the Court of Customs and Patent Appeals and no such appeal is pending or has been decided.

XI. Plaintiff further states that the said invention as expressed in said claims 1 to 14 inclusive, of said application is new and useful and was not known or used by others in this country before the invention thereof by the said Thomas E. Murray, Jr., and was not patented or described in any printed publication in this or any foreign country before the invention thereof by said Thomas E. Murray, Jr.'s application for patent therefor in this country, and was not in public use or on sale in this country for more than two years prior to said Thomas E. Murray, Jr.'s application, and was not patented in any foreign country by said Thomas E. Murray, Jr., or his legal representatives or assigns on an application filed more than twelve months prior to said Thomas E. Murray, Jr.'s, application in this country, and was not abandoned.

XII. Wherefore, the plaintiff prays that this Honorable Court shall revise and reverse the decision of the Board of Appeals and of the said defendant, Thomas E. Robertson, Commissioner of Patents; shall adjudge that the plaintiff is entitled, according to law, to receive a patent for the invention specified in said claims 1 to 14, inclusive, of said application; and shall authorize the said defendant, Thomas E. Robertson, to issue a patent to the plaintiff containing said claims on the filing in the Patent Office of a copy of this Court's adjudication and otherwise complying with the requirements of law; and for such other and further relief in the premises as the nature of the case may require and to this Honorable Court shall seem meet.

METROPOLITAN ENGINEERING
COMPANY,
By THOMAS E. MURRAY, Jr.,
Pres.

NEEDHAM C. TURNAGE,
JOSEPH H. MILANS,
CALVIN T. MILANS,
Attorneys and Counsel for Plaintiff.
USINA & RAUBER,
Counsel.

State of New York,
County of Kings, ss:

On this 22d day of January, 1932, personally appeared before me the above named Thomas E. Murray, Jr., the President of the plaintiff Company named in the foregoing Bill of Complaint and, being duly sworn, did depose and say that he has read the said Bill by him subscribed and knows the contents thereof and that the same is true to the
6 best of his knowledge and belief.

[seal.] STEPHEN S. McCARTHY,
Notary Public.

Notary Public, Kings Co. No. 159, Reg. No. 3042.
Cert. filed in N. Y. Co. No. 105, Reg. No. 3-Mc-80.
Commission expires March 30th, 1933.

Answer to Bill of Complaint.

Filed February 5, 1932.

* * * * * * *

To the Honorable the Judges of the Supreme Court of the District of Columbia:

Thomas E. Robertson, Commissioner of Patents, defendant herein, in answer to the Bill of Complaint alleges on information and belief as follows:

I. He admits for the purpose of this suit the allegations of paragraph I.

II. He admits the allegations of paragraph II.

III. He admits the allegation of jurisdiction under Section 4915 R. S. (35 U. S. C. A. 63).

IV. He admits that Thomas E. Murray, Jr., on the 27th day of December, 1929 filed in the United States Patent Office the application for letters patent for Automobile Frames, to which Serial No. 416,986 was given.

V. He admits that said application was duly prosecuted and that the primary examiner finally rejected and refused to allow claims 1 to 14, inclusive, which claims read as recited in paragraph V.

VI. He admits the allegations of assignment in paragraph VI.

VII. He admits the allegations of paragraph VII.

7 VIII. He admits that the Patent Office tribunals held said claims unpatentable over the three prior patents mentioned in paragraph VIII.

IX. He admits that the defendant has refused and still refuses to allow said claims 1 to 14, inclusive, but denies that the said claims are patentable over the following prior patents, viz.:

Schmidt, 924,941, June 15, 1909;
Chesnutt, 991,137, May 2, 1911;
Klepp, 1,149,069, Aug. 3, 1915.

Profert of copies of said patents is hereby made.

X. He admits the allegations of paragraph X.

XI. Defendant has no information respecting plaintiff's allegations of invention and the non-existence of statutory bars except as informed by the Bill and by the said Murray application Serial No. 416,988.

Further answering defendant denies that the said claims 1 to 14, inclusive, are patentable to the applicant or to plaintiff over the prior patents mentioned in the answer to paragraph IX of the Bill, as more fully appears from the statement of the Examiner and the decision of the Board of Appeals, profert of copies of which is hereby made.

And further answering defendant denies each and every allegation of the Bill of Complaint not herein specifically and sufficiently denied or admitted, and prays that plaintiff's Bill of Complaint be dismissed.

Wherefore defendant having fully answered the Bill of Complaint denies that plaintiff is entitled to the relief demanded or any part thereof and prays that he be hence dismissed with all costs of the proceedings against the plaintiff as provided in Section 4915 R. S.

THOMAS E. ROBERTSON,
Commissioner of Patents,
Defendant.

T. A. HOSTETLER,
Solicitor of the U. S. Patent Office,
Attorney for Defendant.

8 District of Columbia,
City of Washington, ss:

I, Thomas E. Robertson, Commissioner of Patents, depose and say that I have read the above answer by me subscribed and know the contents thereof, and that the statements of facts therein made as upon personal knowledge are true, and those made upon information and belief I believe to be true.

THOMAS E. ROBERTSON,
Commissioner of Patents.

Subscribed and sworn to before me this 1st day of February, 1932.

[seal.] ALBERT W. KAISER,
Notary Public, D. C.

My commission expires April 6, 1933.

Order Substituting Defendant.

Filed December 15, 1933.

* * * * * * *

Upon consideration of the motion filed herein by plaintiff in the above entitled cause, it is by the Court this 15th day of December, 1933,

Adjudged, ordered, and decreed, That Conway P. Coe, Commissioner of Patents, be substituted in his official capacity as defendant in the above entitled cause for Thomas E. Robertson, formerly Commissioner of Patents.

F. D. LETTS,
Justice.

9 *Memorandum of Court.*

Filed March 24, 1934.

* * * * * * *

I agree with the conclusions reached by the Board of Appeals of the Patent Office.

The bill should be dismissed with costs.

BAILEY, *J.*

Final Decree.

Filed April 11, 1934.

* * * * * * *

This cause having come on to be heard and having been tried in open court and argued by counsel for the respective parties upon the pleadings and proofs adduced and submitted to the Court,

It is adjudged, ordered and decreed this 11th day of April, 1934, that the Bill of Complaint in this case be, and the same hereby is dismissed with costs against the plaintiff.

JENNINGS BAILEY,
Justice.

Approved as to form.
JOSEPH H. MILANS,
Attorney for Plaintiff.

From the foregoing decree the plaintiff, Metropolitan Engineering Company, in open court on the date named above, notes an appeal to the Court of Appeals of the District of Columbia, and the Court fixes the cost bond on said appeal in the sum of $100, or in lieu thereof the sum of $50 in cash to be deposited with the Clerk of this Court.

JENNINGS BAILEY,
Justice.

10 *Memoranda.*

April 25, 1934.—$50.00 deposited in lieu of bond on appeal.

May 11, 1934.—Statement of Evidence (in duplicate) filed.

Assignment of Errors.

Filed May 11, 1934.

* * * * * * *

The Plaintiff in the above entitled cause, in support of its appeal from the final decree of this Court herein, submits the following as its assignment of errors.

The Court erred:

1. In dismissing the bill of complaint.
2. In adjudging that, for the reasons stated by the Board of Appeals of the Patent Office, Plaintiff is not entitled to receive a patent for the invention specified in the claims of its application as prayed for in the bill of complaint.
3. In other respects apparent on the record.

Wherefore, Plaintiff prays that said decree entered herein on the 11th day of April, 1934 be reversed by the Court of Appeals of the District of Columbia and that the Supreme Court of the District of Columbia be ordered to enter a decree accordingly.

JOSEPH H. MILANS,
Solicitor for Plaintiff.

USINA & RAUBER,
Counsel.

Washington, D. C., May 11th, 1934.

Copy of the foregoing Assignment of Errors received this 11 day of May, 1934.

T. A. HOSTETLER,
Attorney for Commissioner of Patents.

11

Memorandum.

May 14, 1934.—Statement of Evidence submitted, signed and made of record.

Designation of Record.

Filed May 11, 1934.

* * * * * * *

Now comes Metropolitan Engineering Company, plaintiff-appellant in the above entitled cause, and designates the parts of the record which it desires to have included in the transcript, said parts being considered sufficient for the determination of the questions raised on appeal, namely:

1. The bill of complaint filed January 25, 1932.
2. Answer filed February 1, 1932.
3. Memorandum of trial judge holding that plaintiff is not entitled to receive a patent as prayed for in the bill of complaint.
4. Final decree with notation of appeal in open court and the fixing of cost bond or in lieu thereof the sum of $50.00 in cash, filed April 11, 1934.
5. Memorandum showing deposit by appellant of $50.00 with Clerk of Supreme Court of the District of Columbia in lieu of bond for costs, deposit made April 25, 1934.
6. Statement of Evidence, with appendix of copies of paper exhibits, filed May 11th, 1934.
7. This Designation of Record, filed May 11th, 1934.
8. Assignment of Errors, filed May 11th, 1934.

JOSEPH H. MILANS,
Solicitor for Plaintiff-Appellant.

USINA & RAUBER,
Counsel.

12 We hereby agree to the foregoing Designation of Record and acknowledge receipt of a copy thereof this 11 day of May, 1934.

T. A. HOSTETLER,
Attorney for Defendant-Appellee.

13 Supreme Court of the District of Columbia.

UNITED STATES OF AMERICA,
District of Columbia, ss:

I, Frank E. Cunningham, Clerk of the Supreme Court of the District of Columbia, hereby certify the foregoing pages numbered from 1 to 12, both inclusive, to be a true and correct transcript of the record, according to directions of counsel, herein filed, copy of which is made part of this transcript, in cause No. 53944 in Equity, wherein Metropolitan Engineering Company is Plaintiff and Thomas E. Robertson, Commissioner of Patents, is Defendant, as the same remains upon the files and of record in said Court.

In testimony whereof, I hereunto subscribe my name and affix the seal of said Court, at the City of Washington, in said District, this 3rd day of August, 1934.

[Seal Supreme Court of the District of Columbia.]

FRANK E. CUNNINGHAM,
Clerk.

14 Filed May 11, 1934. Frank E. Cunningham, Clerk.

4113.

In the Supreme Court of the District of Columbia.

In Equity.

No. 53,944.

Metropolitan Engineering Company, Plaintiff,

vs.

Conway P. Coe, Commissioner of Patents, Defendant.

Statement of Evidence.

At the hearing of the above entitled cause on March 15, 1934, before Mr. Justice Bailey, the following proceedings were had and evidence offered and given.

Counsel for Plaintiff offered in evidence a booklet containing the three patents which are the basis of the rejection of Plaintiff's application by the Commissioner of Patents; and containing also prints of the drawings of Plaintiff's application, the Examiner's Statement, and the Decision of the Board of Appeals.

The volume was received in evidence and marked "Plaintiff's Exhibit 1".

Counsel for Plaintiff offered a copy of Plaintiff's application as filed, the Decision of the Board of Appeals, and the application claims as they were presented to the Board of Appeals, these papers ribboned together.

This set of papers was received in evidence and marked "Plaintiff's Exhibit 2".

Counsel for Plaintiff offered the Murray original patent, of which Plaintiff's present application is for reissue;

which was received in evidence and marked "Plaintiff's Exhibit 3".

15 Counsel for Plaintiff offered a copy of the first letter of the Examiner in which he said "Claims 1, 2, 4 to 8, 10 and 11 are allowed" which was received in evidence and marked "Plaintiff's Exhibit 4".

Counsel for Plaintiff offered an affidavit of Thomas E. Murray, Jr.; which was received in evidence and marked "Plaintiff's Exhibit 5".

It was stipulated between Counsel for the respective parties that if the said Thomas E. Murray, Jr., were called he would testify to the facts stated in said affidavit, Exhibit 5.

Counsel for Plaintiff offered in evidence copy of an article printed in "Automotive Industries" with an attached stipulation that it is a true copy, that it was published in 1931 in "Automotive Industries" and that this is a journal of good standing in the automobile industry; which was received in evidence and marked "Plaintiff's Exhibit 6".

Whereupon the cause was argued by Counsel for the respective parties.

The foregoing, together with the appendix hereto, contains the substance of all the evidence given on the hearing of this cause and is approved, signed and ordered to be made of record in the above entitled cause this 14th day of May, 1934.

By the Court.

JENNINGS BAILEY,
Justice.

We hereby agree that the foregoing statement of evidence and the appendix of exhibits thereto are correct and that the same may be approved by the Court.

JOSEPH H. MILANS,
Solicitor for Plaintiff,
T. A. HOSTETLER,
Attorney for Defendant.

USINA & RAUBER,
Counsel.

May 11, 1934.

M. KLOPP.

WAGON BED.

APPLICATION FILED JAN. 31, 1914.

1,149,069. Patented Aug. 3, 1915.

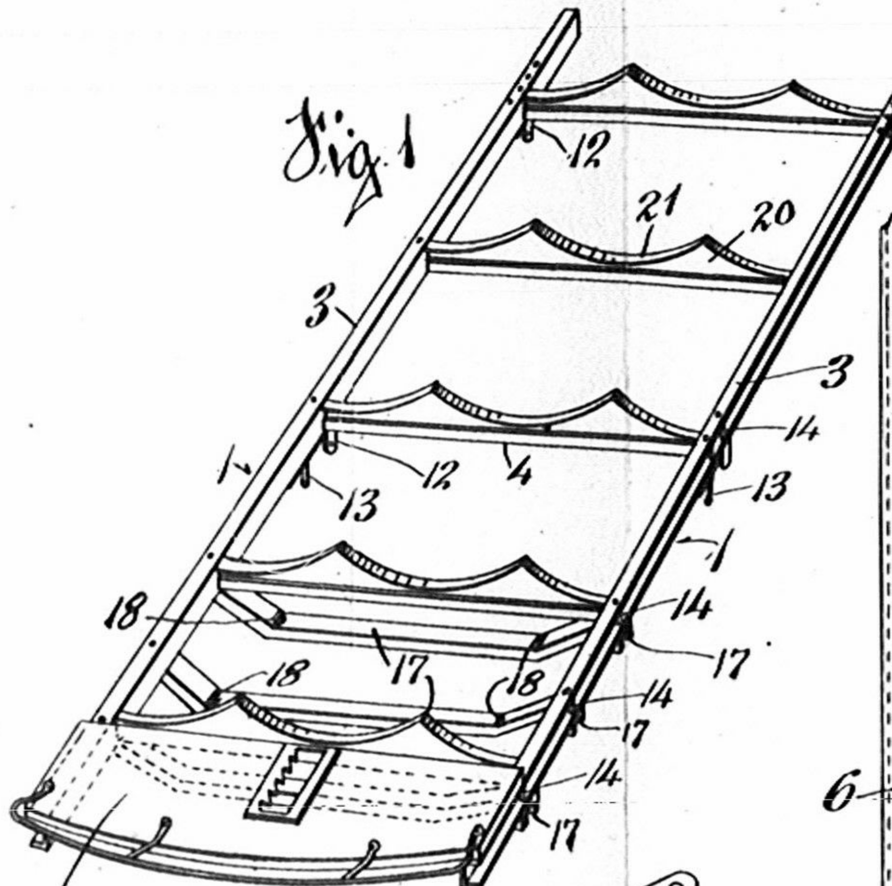


Fig. 1

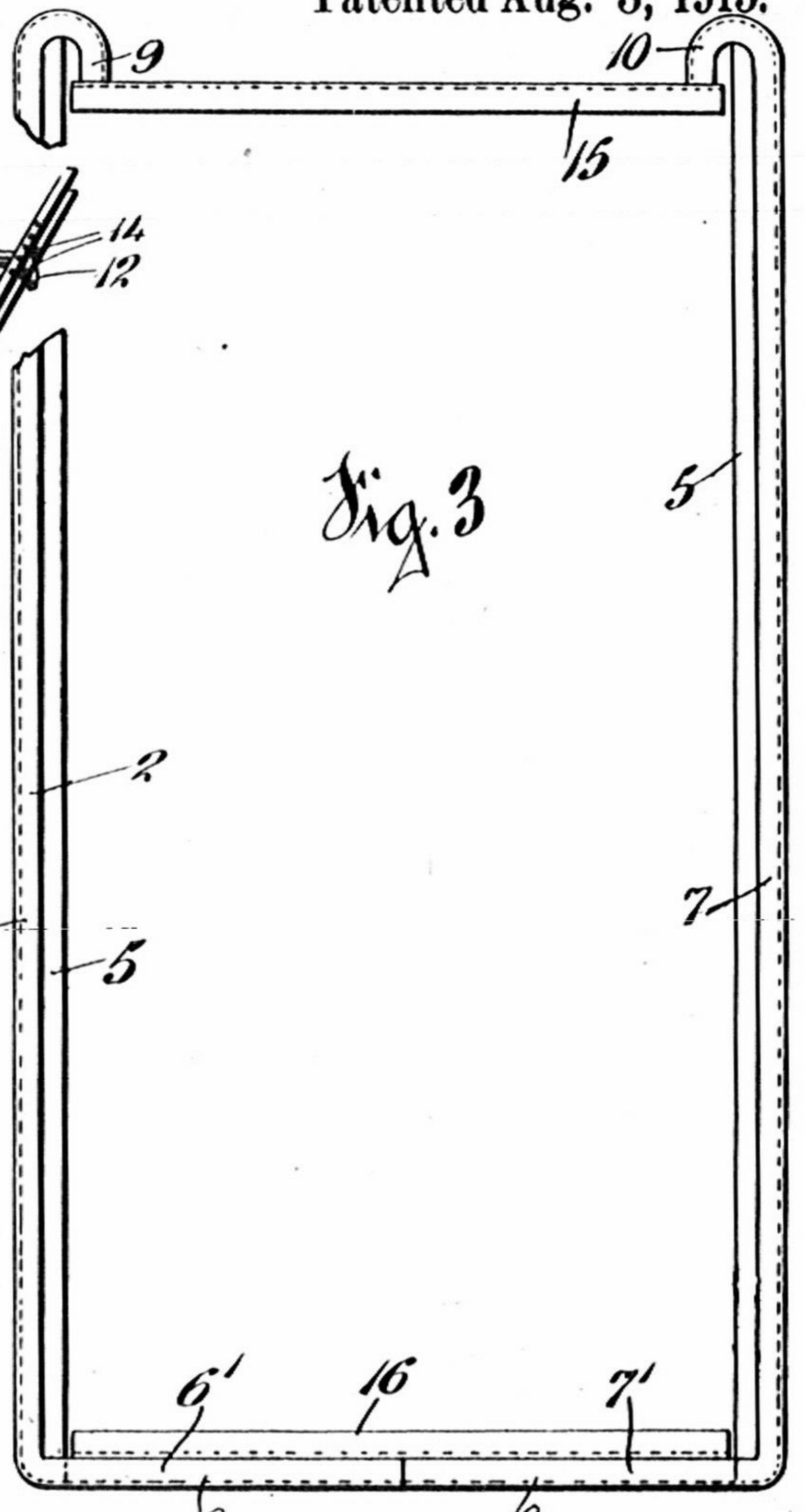


Fig. 3

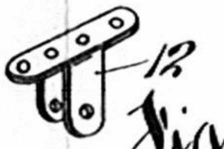


Fig. 7

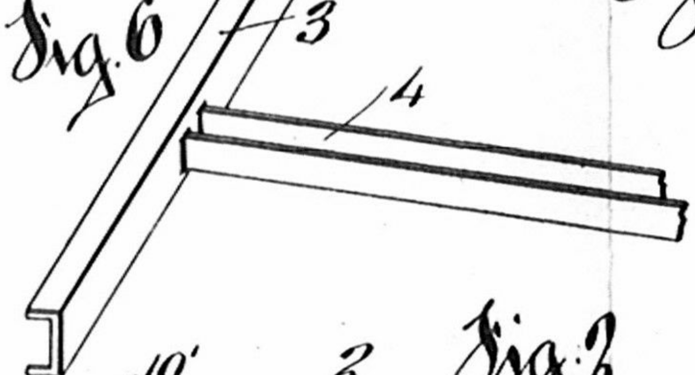


Fig. 6

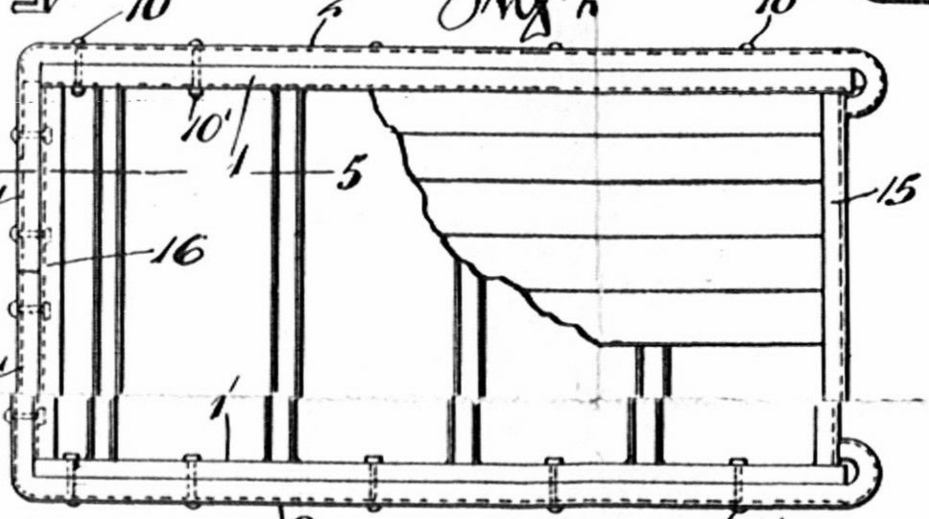


Fig. 2

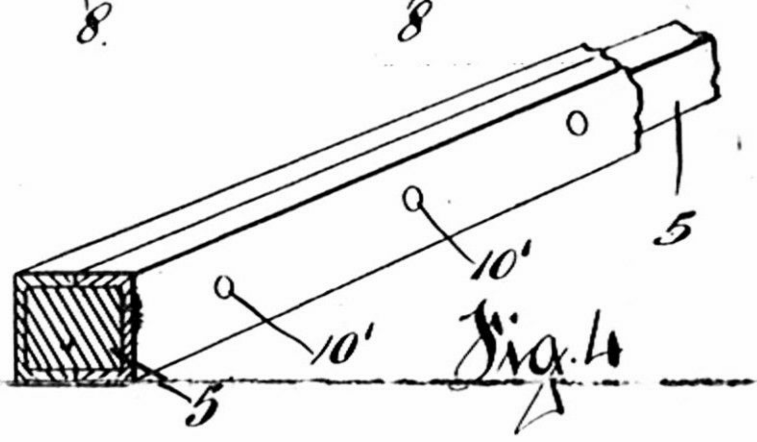


Fig. 4

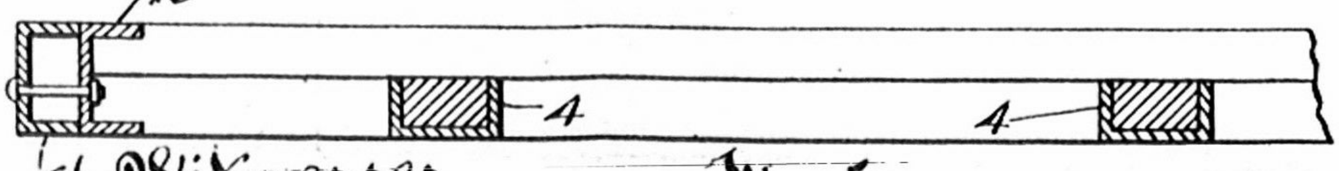


Fig. 5

Witnesses
Anna W. Hickey
Harry Brunner

Inventor
Michael Klopp
by Oliver & Pearman
Attorney

UNITED STATES PATENT OFFICE.

MICHAEL KLOPP, OF CINCINNATI, OHIO.

WAGON-BED.

1,149,069. Specification of Letters Patent. **Patented Aug. 3, 1915.**

Application filed January 31, 1914. Serial No. 815,676.

To all whom it may concern:

Be it known that I, Michael Klopp, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Wagon-Beds, of which the following is a specification.

My invention relates to wagon beds, and more particularly to that class of wagon beds used on oil tank, beer, ice wagons and the like.

The object of my invention is to provide a neat, efficient inexpensive and most durable frame for wagon beds.

My invention consists of constructing a wagon-bed in a new and novel manner to produce a strong, neat appearing and efficient wagon bed, and one which is inexpensive to manufacture and which eliminates all unnecessary wooden structure.

In wagon beds of the ordinary wooden construction the wood therein quickly decays and rots, particularly in wagons where the product carried, together with the exposure to the weather, affects the wood.

In the drawings: Figure 1 is a perspective view of the inner channeled metal frame as it appears when used separately for use on tank wagons, and showing the usual fixtures mounted thereon for the attachment of the springs, brake levers, etc. Fig. 2 is an assembled view showing my complete device, the floor being broken away for the sake of clearness. Fig. 3 is a plan view of the outer frame employed in my invention. Fig. 4 is a sectional perspective view of one of the sills of the wagon bed. Fig. 5 is a longitudinal section taken on the line 5—5 of Fig. 2. Fig. 6 is a perspective view of a fragment of the sill of the inner frame showing the welded joint of the cross channeled support. Fig. 7 is a perspective view of one of the fixtures placed on the frame.

Referring more particularly to the drawings, 1 illustrates the inner channeled metal frame, which is adapted to be placed inside of another channeled metal frame 2. The channeled metal frame 1 comprises channeled metal sills 3 and channeled metal cross supports 4 welded thereto, thereby constituting a channeled metal wagon bed frame made practically of one piece of channeled metal material. The sills 3 have their channels facing outwardly, in order to provide for a wooden filler and reinforcing member 5 when the two frames are used together, to form a most durable wagon bed frame. These fillers extend the entire length of the wagon bed frame. The outer channeled metal frame 2 comprises the sills 6 and 7, which are preferably bent at right angles at the rear to form the finished back 8 of the wagon bed. These rear angular extensions 6′ and 7′ are bolted to the inner frame 1. The channeled sills 6 and 7 on the outer frame face inwardly and the wooden filler or reinforcing member 5 is then placed half in said channel on the outer sills 6 and 7, and half in the channels of the inner sills 3 of the inner frame, allowing the edges of the channeled sills to engage each other, thereby producing a most efficient sill for the wagon bed. By placing the wooden sills inside of the channeled sills they are securely bound together and form a most rigid sill which is best adaptable for wagons used for heavy hauling.

The wooden filler 5 by being mounted in the manner described is thoroughly protected from exposure to the weather by the channeled sill on the inner and outer frames, and forms an efficient reinforcing and binding member for the metal sills.

The outer frame comprising the sills 6 and 7 is bent at the fore end to form a support for the steps of the wagon as shown at 9 and 10, and is connected at the fore end by the cross channel iron 15, and at the rear with a corresponding cross channel iron 16. The frames are securely bolted together by the bolts 10′ and when properly constructed and assembled produce a wagon bed which is most efficient, durable, economical to manufacture and neat in appearance.

A great advantage in constructing the sills of channel metal with the wooden filler and reinforcing member, as described, is, that it is not necessary to further reinforce the sill with long iron plates when constructing platform wagons, that is, without sides, or where the lower frame or bed is used only. This is absolutely necessary with wooden sills to prevent the same from sagging.

Metal wagon beds have not been placed on the market extensively, because of the fact that the expense of manufacturing was greater than that of wooden ones, and they were invariably too heavy for practical use.

My improved body is light in weight, simple in construction and neater in appearance than those now made, due to the novel features of construction which it embodies.

The cross supports on the wagon bed are preferably welded in position to the sides of the metal sills and are thereby secured against any joints breaking on account of weak bolts, which is so often the case with the wooden beds where the bolts are used. Thus this feature overcomes any liability of the wagon bed spreading due to a bolt breaking.

The channeled metal cross supports preferably have the channels facing upwardly and are filled with wooden fillers 20 flush with the top of the channels when a flat bottom is used. However, when the frame is to carry a cylindrical or square tank, the wooden fillers 20 are larger and extend up and beyond the flanges of the channeled cross supports, thereby forming tank support blocks which are provided with cut surfaces 21 to receive and properly support the oil tank, as shown in Fig. 1. In this particular oil tank type where the sills are not required to support so much weight, the outer frame and wooden filler may be eliminated as shown in Fig. 1. The wooden supports are placed in the channeled metal cross supports to form a bed or support for the tank. The bed when used in this manner is provided with extensions at the front to be used for the toe board 11 as shown in Fig. 1.

When the inner frame is used as illustrated in Fig. 1 the fixtures consisting of the shackles 12, used for the attachment of the springs, and the posts for the brake levers, are riveted to the sills 3, the bolts having spacing sleeves 14 between the flanges of the sills to properly brace same. Channeled metal cross supports 17 are provided near the front of the frame shown in Fig. 1, to which the fifth wheel of the wagon is fastened, which in turn is mounted on the wagon gear. These supports are bolted to the inner side of the frame, having the channels facing downwardly, and are bent at 18 to carry the wagon frame at the proper height from the wagon gear.

Certain modifications of my invention might be made without departing from its spirit and scope, and I do not wish to be confined to the exact details shown.

What I claim as new and desire to secure by Letters Patent is:

1. In a wagon bed and in combination, a channeled metal outer frame having the channels thereof facing inwardly, the channeled metal inner frame fastened thereto and having the channels thereof facing outwardly, channeled metal cross supports on said inner frame, and wood fillers in between said inner and outer frames filling the channel of each substantially as set forth.

2. In a wagon bed and in combination, an inner channeled metal frame comprising channeled metal sills connected by transverse channeled metal supports, an outer channeled metal frame comprising channeled metal sills, said outer frame surrounding two sides and one end of said inner channeled frame, and a wooden filler being surrounded by the sills of said inner and outer channeled metal frames.

3. In a wagon bed and in combination, an inner channeled metal frame having the channels thereof facing outwardly, an outer channeled metal frame having the channels thereof facing inwardly, a wood filler adapted to fit into and fill the channels of each of said frames at the sides thereof, said outer channeled metal frame being fastened securely to said inner frame clamping said wood filler therebetween, and channeled metal cross supports upon said inner frame, substantially as set forth.

4. In a wagon bed and in combination, an inner channeled metal frame having channeled metal cross supports thereon, an outer channeled metal frame fastened to said inner frame on three sides thereof, and curved portions at the front of said outer frame.

5. A wagon bed comprising channeled metal sills having the channels thereof facing outwardly, channeled metal cross supports having the channels thereof facing upwardly, and tank supporting blocks in the channels of said cross supports.

MICHAEL KLOPP.

Witnesses:
Oliver W. Sharman,
Harry Brunner.

17

C. SCHMIDT.

FRAME FOR MOTOR VEHICLES.

APPLICATION FILED MAR. 10, 1905.

924,941. Patented June 15, 1909.

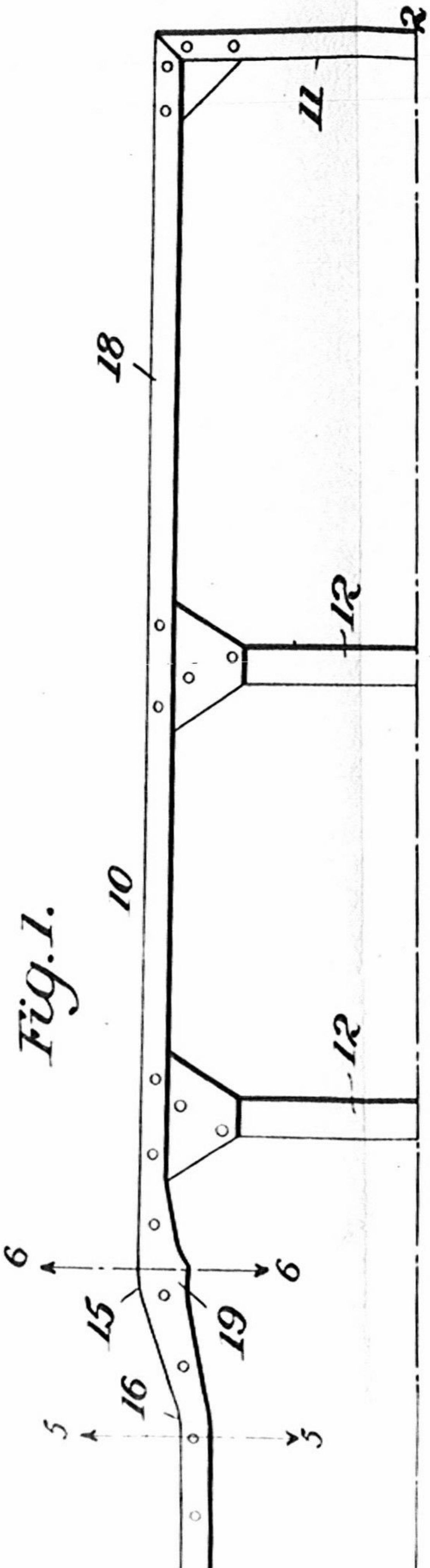


Fig. 1.

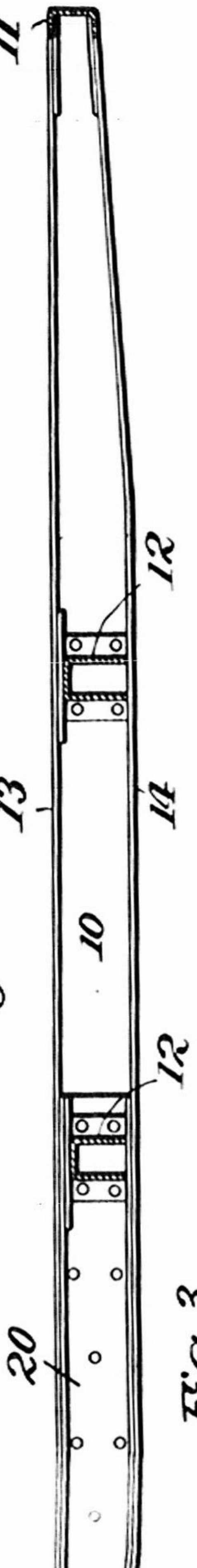


Fig. 2.

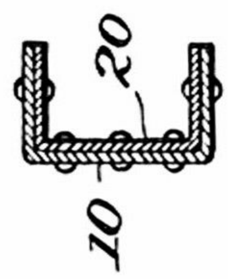


Fig. 6.

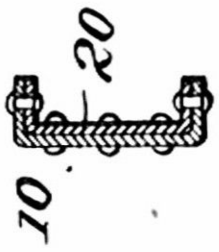


Fig. 5.

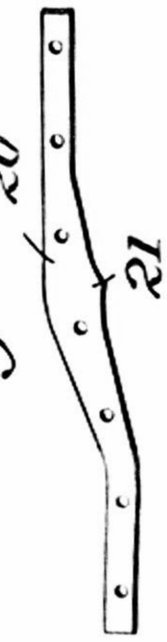


Fig. 3.

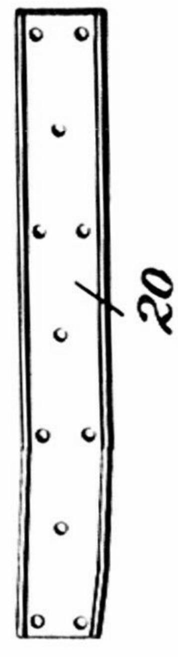


Fig. 4.

Witnesses

J. G. Stinkel

W. M. Gillman, Jr.

Inventor

Charles Schmidt

By Foster Freeman & Watson

Attorneys

UNITED STATES PATENT OFFICE.

CHARLES SCHMIDT, OF DETROIT, MICHIGAN, ASSIGNOR TO PACKARD MOTOR CAR COMPANY,
OF DETROIT, MICHIGAN, A CORPORATION OF WEST VIRGINIA.

FRAME FOR MOTOR-VEHICLES.

No. 924,941. **Specification of Letters Patent.** **Patented June 15, 1909.**

Application filed March 10, 1905. Serial No. 249,442.

To all whom it may concern:

Be it known that I, Charles Schmidt, a citizen of France, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Frames for Motor-Vehicles, of which the following is a specification.

This invention relates to improvements in motor vehicle frames and it consists in a frame in which each of the side bars has a reverse curve or offset and a reinforce coincident with said curve or offset whereby the frame is equally rigid throughout its length.

The invention will be described in connection with the accompanying drawing, in which,

Figure 1 is a half plan view of a motor vehicle frame embodying the invention; Fig. 2 is a sectional view on the line 2—2 of Fig. 1; Figs. 3 and 4 are plan and side views of the reinforce, and Figs. 5 and 6 are sections respectively on the lines 5—5 and 6—6 of Fig. 1.

Referring to the drawing the frame consists of side bars 10, end bars 11 and transverse bars or braces 12. The side and end bars are of channel-section, having upper flanges 13 and lower flanges 14. They have preferably a uniform depth at the middle portion and taper toward the ends, as shown in Fig. 2, the lower flange 14 being preferably inclined upward while the upper flange 13 is horizontal. Toward one end of the frame the side bars are offset, being curved inward at 15 and outward at 16, the general contour being that of a reverse curve and the forward portion 17 being parallel with the rear portion 18. At the offset portion the upper and ower flanges of the side bars are increased in width as shown at 19 and the offset portion s reinforced by a corresponding piece or renforce 20. The reinforce is preferably of hannel-section of such size as to fit snugly within the side bar proper and having its anges enlarged at the middle as shown at 21, to correspond with the enlargement 19 of the side bar flanges. The reinforce is suitably connected to the side bar by rivets. A frame thus constructed is practically of uniform strength throughout its length and is not weakened by the offset or reversely curved outline which is necessary to adapt it to the vehicle body.

Having described my invention what I claim and desire to secure by Letters Patent is,

1. A motor vehicle frame having its side bars reversely curved or offset as shown, each side bar having parallel front and rear portions and having upper and lower flanges which are wider at the offset portion than at the front and rear portions.

2. A motor vehicle frame comprising end bars and side bars having upper and lower flanges, the side bars having intermediate offset or reversely curved portions, and channeled reinforcing pieces secured to said side bars at the offset portions and between the upper and lower flanges thereof, the flanges being wider at the offset portions of the side bars than elsewhere, for the purpose set forth.

3. A motor vehicle frame comprising channeled side bars, the lower flanges of said side bars being inclined upwardly at each end and the upper flanges of said side bars being substantially horizontal, said side bars having offset portions intermediate their ends, and reinforcing pieces secured within the flanges of the side bars at the offset portions, the flanges being wider at the offset portions of the side bars than elsewhere, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES SCHMIDT.

Witnesses:
Russell Huff,
Mark C. Taylor.

T. S. CHESNUTT.
LOADING TRUCK.
APPLICATION FILED APR. 28, 1910.

991,137. **Patented May 2, 1911.**

3 SHEETS—SHEET 1.

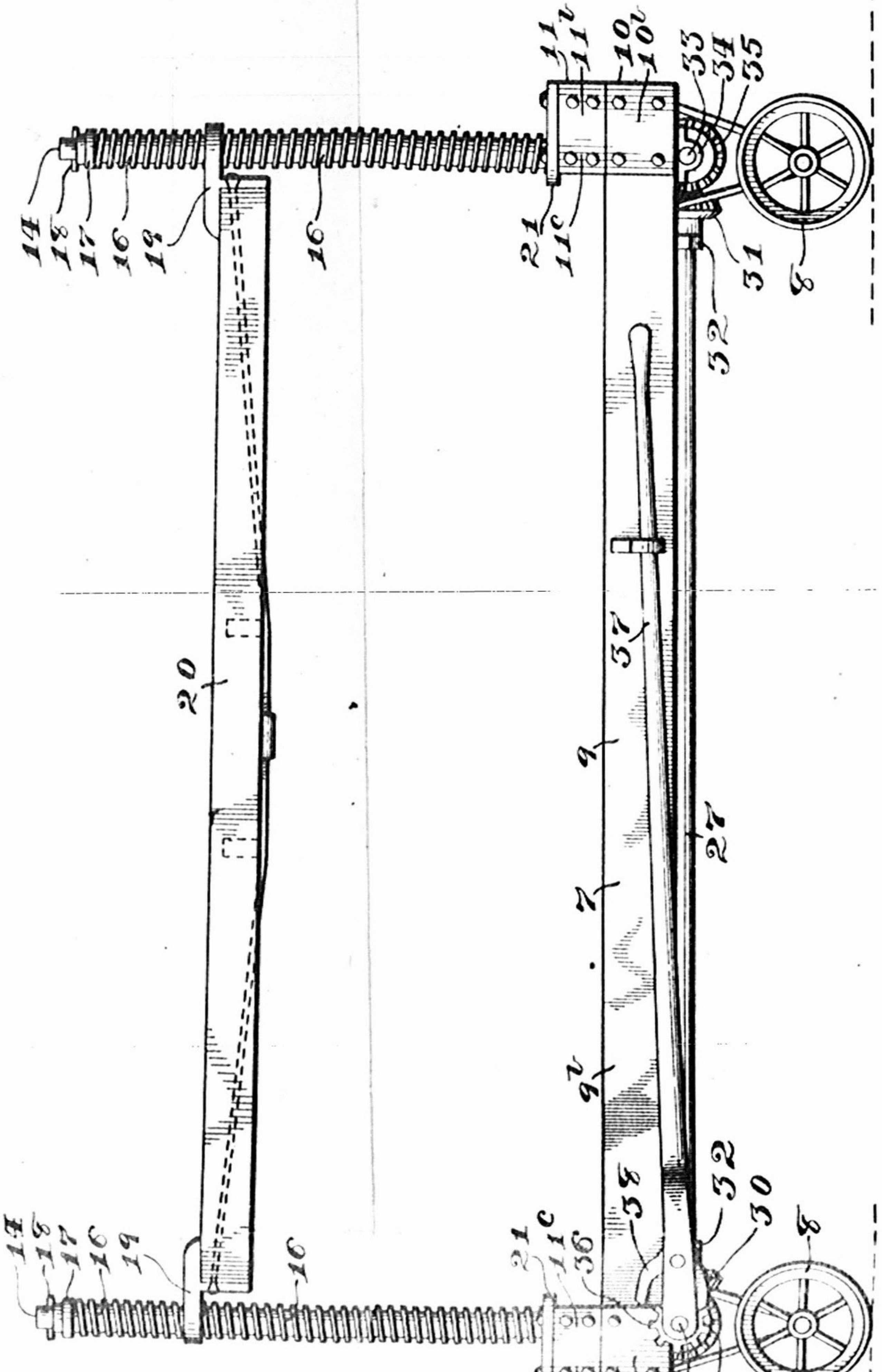


Fig. 1.

WITNESSES:
John V. Dappert
J. C. Adam

INVENTOR.
Thomas S. Chesnutt.
BY
Frank P. Shepard.
ATTORNEY.

20

T. S. CHESNUTT.
LOADING TRUCK.
APPLICATION FILED APR. 28, 1910.

991,137.

Patented May 2, 1911.
3 SHEETS—SHEET 2.

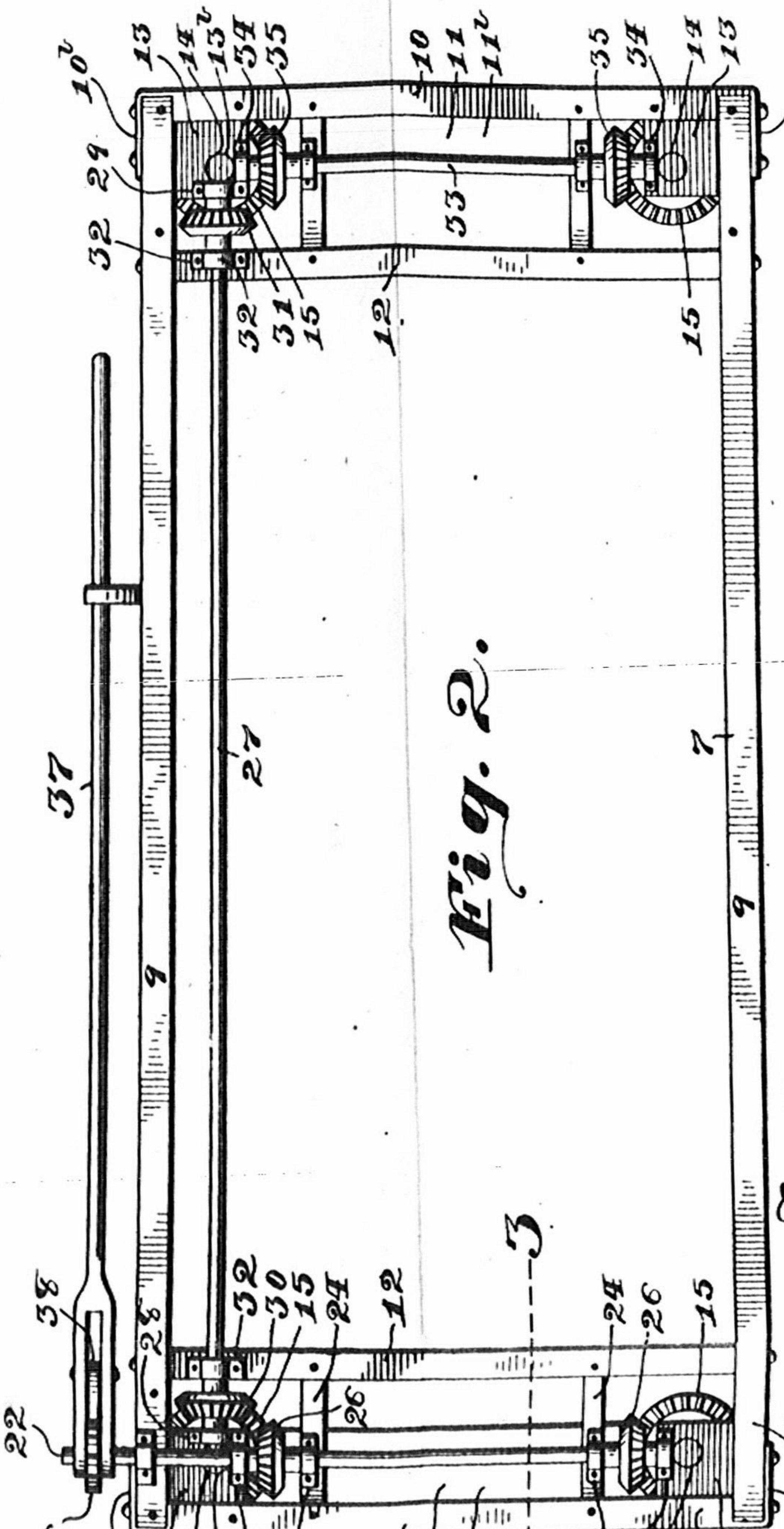


Fig. 2.

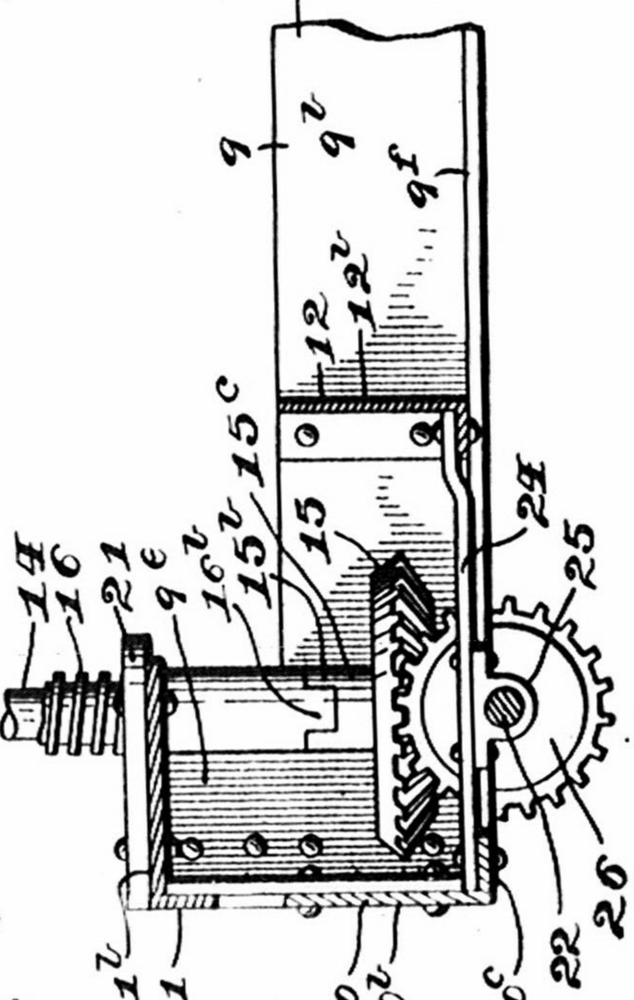


Fig. 3.

WITNESSES:
John V. Dappert.
J. C. Adams

INVENTOR.
Thomas S. Chesnutt.
BY
Frank P. Shepard.
ATTORNEY.

T. S. CHESNUTT.

LOADING TRUCK.

APPLICATION FILED APR. 28, 1910.

991,137.

Patented May 2, 1911.

3 SHEETS—SHEET 3.

Fig. 5.

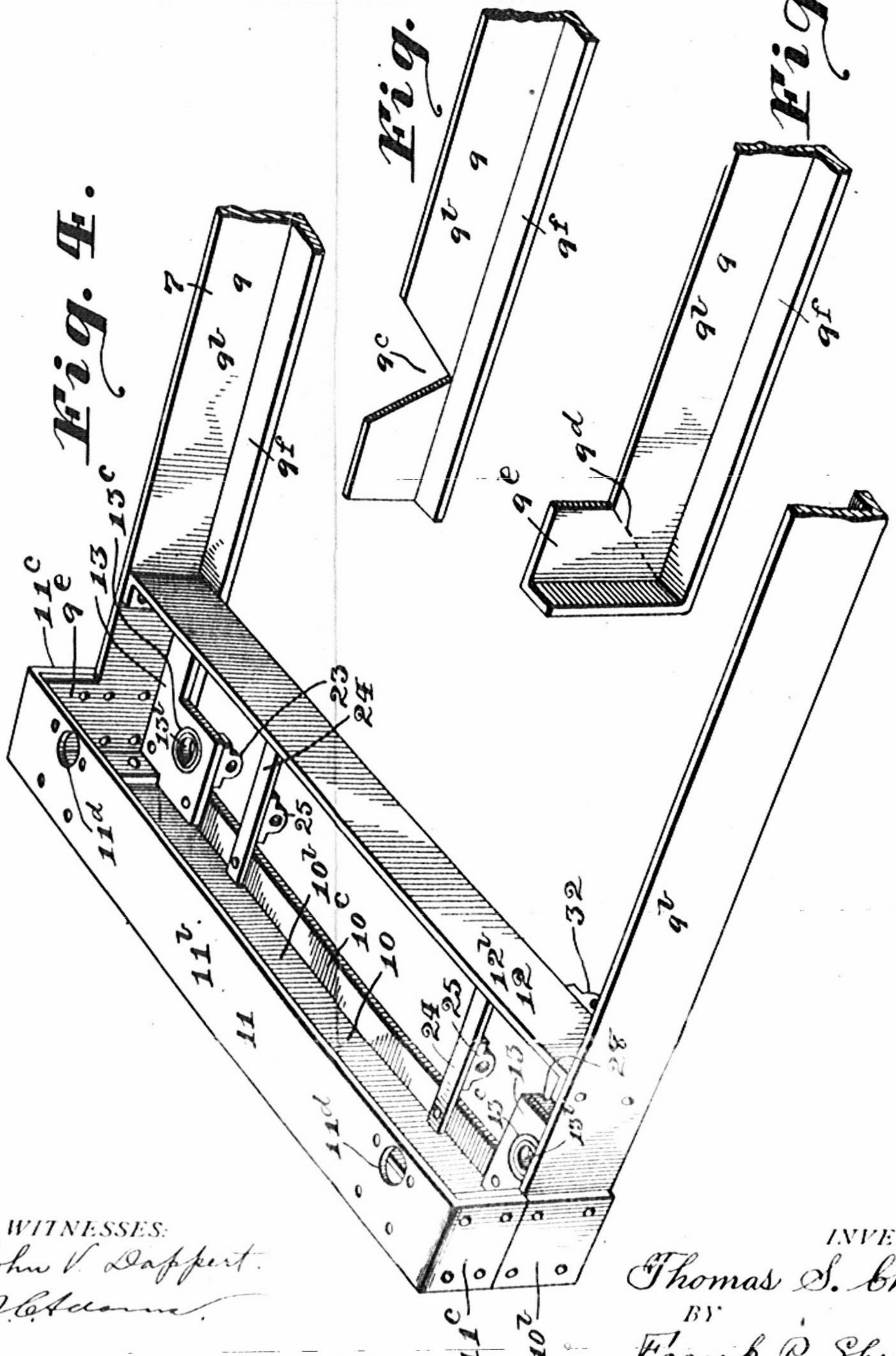


Fig. 6.

Fig. 4.

WITNESSES:

John V. Dappert.

J. C. Adams

INVENTOR.

Thomas S. Chesnutt.

BY

Frank P. Shepard.

ATTORNEY.

UNITED STATES PATENT OFFICE.

THOMAS S. CHESNUTT, OF OKLAHOMA, OKLAHOMA.

LOADING-TRUCK.

991,137. Specification of Letters Patent. Patented May 2, 1911.

Application filed April 28, 1910. Serial No. 558,251.

To all whom it may concern:

Be it known that I, Thomas S. Chesnutt, a citizen of the United States, residing at Oklahoma city, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful Improvements in Loading-Trucks, of which the following is a full, clear, and exact description, reference being had to the drawings hereto annexed.

This invention pertains to the class of loading-trucks in which the platform or bed portion is movable vertically, and in which means are provided for raising or lowering said platform and its load.

Letters Patent Number 911,111 were issued to me on February 2, 1909, for improvements in loading-trucks, and one of the objects of the present invention is to improve upon the means shown in said Letters Patent for raising and supporting the platform.

Another object is to improve upon the construction of the main body or framework of the truck.

Other objects and advantages of the invention will be set forth in the ensuing description.

Referring to the accompanying drawings: Figure 1 is a left-hand side elevation of the improved loading-truck, showing the platform elevated. Fig. 2 is an inverted plan view of the loading-truck on same scale as Fig. 1; the platform, supporting wheels, and axles being omitted. Fig. 3 is an enlarged fragmental sectional view, taken on the line 3—3 of Fig. 2. Fig. 4 is a perspective view of the front end of the frame-work of the loading-truck. Fig. 5 is a similar view of a portion of angle-steel, cut for shaping into a portion of the frame-work. Fig. 6 is a view of the same piece of angle-steel, after it has been shaped and welded.

Referring to the several figures, in all of which like characters of reference designate like parts, the improved loading-truck, hereinafter referred to as the truck, comprises a main frame-work 7, which is supported by four ground wheels 8. This frame-work 7 consists, in part, of the right and left side pieces 9 and the front and rear cross-pieces 10, which are riveted to said side pieces. The front and rear cross-pieces 10 are formed of angle-steel, as are also the side pieces 9, the vertical portions 10^b of said cross-pieces 10 being bent or folded around at right angles and riveted flatly against the outside surface of the front and rear ends of the corresponding portions 9^b of the side pieces 9. However, the side pieces 9, before being assembled with the cross-pieces 10 as just described, have their ends bent squarely upward, as best shown in Fig. 6, this being done by first cutting away a part of the vertical portion 9^b of said side pieces, as at 9^c in Fig. 5, and then bending said ends upward and welding said vertical portions together on the miter joint line 9^d as shown in Fig. 6. In addition to the front and rear pieces 10 aforesaid, the frame-work 7 is provided at each end with a second or upper cross-piece 11 of angle-steel, the upper horizontal portions 11^b of these cross-pieces having their ends 11^c lapped downward and riveted to the outer face of the upturned end portions 9^e of the side pieces 9. The framework 7 is further provided with cross-pieces 12 of angle-steel near its front and rear ends, the vertical portions 12^b of said cross-pieces being bent at right angles and riveted flatly against the inner faces of the vertical portions 9^b of the side pieces 9.

The frame-work 7 is provided in each one of its four corners with a base-plate 13 which is riveted to the horizontal portions 9^f and 10^c of the side pieces 9 and end cross-pieces 10, respectively, these base-plates being designed to support certain standards later described. A standard 14, in the form of a round shaft, is inserted rigidly into a hole 13^b, in each one of the four base-plates 13, the upper cross-pieces 11 at each end of the frame-work 7 being provided with holes 11^d directly above the holes 13^b of the base-plates 13 to receive said standards and certain sleeve members carried thereby. A beveled gear-wheel 15 is mounted revolubly on the lower portion of each standard 14, and rests upon its respective base-plate 13, each base-plate being provided with a circular ball-race 13^c so that ball bearings may be interposed between said gear-wheels and base-plates if desired. In addition to the gear-wheel 15, each standard 14, is embraced by a tubular sleeve 16, mounted revolubly upon it, this sleeve being provided on its lower end with gear-teeth 16^b which detachably engage corresponding gear-teeth 15^b on the hub portion 15^c of said gear-wheel. The sleeves 16 are held downward on their standards 14 by cap washers 17 at the tops of said standards, these washers in turn being held down by pins 18 passing through the tops of said standards. The outside surfaces of these sleeves 16 are screwthreaded and have screwthreaded engagement with lugs 19 on the ends of the platform 20, so that by revolving said sleeves said platform is raised or lowered to any desired height.

To afford strength and rigidity to the standards 14, the sleeve 16 of each is embraced by a bearing-plate 21, these bearing-plates being riveted to the upper faces of the upper cross-pieces 11.

For revolving the sleeves 16, a shaft 22 is journaled horizontally across under the front end of the frame-work 7, in bearings 23 which are bolted to the lower faces of the front base-plates 13. To provide additional bearings for this shaft 22, short bars 24 extend from the front lower cross-piece 10 backward to the inner front cross-piece 12, and bearings 25 for said shaft are bolted to these bars. This shaft 22 carries two beveled gear-wheels 26 which engage the gear-wheels 15 on the two front standards 14, so that by revolving said shaft the screwthreaded sleeves 16 are revolved to raise or lower the platform 20.

A shaft 27 extends along under one side of the frame-work 7, the front end of this shaft being journaled in a bearing 28 bolted to the under side of the left-hand front base-plate 13, and its rear end in a bearing 29 bolted to the under side of the left-hand rear base-plate 13. This shaft 27 is provided at its front end with a gear-wheel 30 engaging the gear-wheel 15 of the left-hand front standard 15 of the left-hand standard 14, and its rear end with a gear-wheel 31 engaging the gear-wheel 15 of the left-hand rear standard 14. In addition to its bearings 28 and 29, the shaft 27 is provided with bearings 32, which are secured to the under sides of the inner cross-pieces 12.

A third shaft 33 is journaled laterally under the rear end of the frame-work 7 in bearings 34 bolted to the under sides of the rear base-plates 13, and this shaft is likewise provided with beveled gear-wheels 35 engaging the gear-wheels 15 of the two rear standards 14.

By the arrangement of the parts described, it will be seen that by revolving the front shaft 22 the gear-wheels 15 of the front standards 14 will be caused to run, thus driving the front screwthreaded sleeves 16.

Since the gear-wheel 15 of the left-hand front standard 14 is operatively connected with the gear-wheel 15 of the left-hand rear standard 14 through the shaft 27 and its gear-wheels 30 and 31, and since said gear-wheel 15 of said left-hand rear standard is operatively connected with the gear-wheel 15 of the right-hand rear standard through the rear shaft 33 and its gear-wheels 35 a revolving movement imparted to any one of said shafts 22, 27, and 33 will cause all of the sleeves 16 of the standards 14 to run, thus allowing the platform 20 to be raised or lowered at will.

For driving the front shaft 22, its outer or left-hand end is provided with a toothed wheel 36, and with a loose lever 37, the pivotal end of said lever being bifurcated to straddle said wheel on said shaft. This lever 37 is provided in its pivotal or bifurcated end with a crescent shaped pawl 38, whose central portion is pivoted in said lever in a manner to allow either of its ends to be swung into operative engagement with the wheel 36 as a ratchet pawl. For throwing the lower end of this pawl 38 into position to engage the toothed wheel 36, the shaft 22 may be slowly and forcibly revolved by swinging the rear or free end of the lever 37 upward and downward, thus raising the platform 20 under heavy load to a position where said load may be transferred to another and higher vehicle or support. By shifting the opposite end of the pawl 38 into engagement with the toothed wheel 36 a vertical swinging movement of the lever 37 will cause the platform 20 and its load to be lowered.

The foregoing being a full, clear, and exact description of the invention, what I claim and desire to secure by Letters Patent is:

1. In a truck, the combination of a supporting frame, a series of standards projecting upwardly from the frame and rigid therewith, gear wheels journaled upon the lower portions of the standards, means for simultaneously turning the gear wheels, threaded sleeves slipped removably upon the standards and having an interlocking connection with the gear wheels so as to revolve upon the standards with the gear wheels, a platform, and means carried by the platform for engaging the threaded sleeves.

2. In a truck, the combination of a rectangular frame, a base plate at each corner of the frame, a standard projecting upwardly from each of the base plates and rigid therewith, gear wheels mounted upon the lower portions of the standards and resting upon the base plates, means for simultaneously turning all of the gear wheels, threaded sleeves slipped removably upon the standards and having an interlocking connection with the gear wheels so as to revolve upon the standards with the gear wheels, a platform, and means upon the platform for engaging the threaded sleeves.

3. In a truck, the combination of a rectangular frame the end pieces of which are formed with spaced horizontal flanges, base plates applied to the lower flanges at the corners of the frame, standards projecting upwardly from the base plates and rigid therewith, gear wheels journaled upon the lower portions of the standards and resting

upon the base plates, means for simultaneously turning all of the gear wheels, threaded sleeves slipped removably over the standards and having an interlocking connection with the gear wheels so as to revolve upon the standards with the gear wheels, bearing plates carried by the upper horizontal flanges and engaging the sleeves, a platform, and means upon the platform for engaging the threaded sleeves.

4. In a truck, the combination of a rectangular frame, cross pieces connecting the sides of the frame and having a spaced relation to the ends of the frame, longitudinally disposed braces between the said cross bars and the ends of the frame, a base plate at each corner of the frame, a standard projecting upwardly from each base plate, a gear wheel journaled upon the lower portion of each standard and resting upon the base plate, a threaded sleeve loose upon each of the standards and having an operative connection with the gear wheel so as to rotate therewith, a transversely disposed shaft at each end of the frame, bearings for the transverse shafts upon the longitudinal braces, bearings upon the base plates for receiving the extremities of the transverse shafts gear wheels upon the transverse shafts between the two bearings for engaging the gear wheels upon the standards, a longitudinal shaft at one side of the frame, bearings for the longitudinal shaft upon the transverse bars, a second set of bearings applied to the base plates and receiving the extremities of the longitudinal shaft, gear wheels applied to the longitudinal shaft between the two sets of bearings for engaging the gear wheels of the respective standards, and means for turning one of the transverse shafts.

Witness my hand this 6th day of April, 1910.

THOMAS S. CHESNUTT.

Witnesses:
M. B. FLEMING,
J. C. ADAMS.

6281. Metropolitan Engineering Company,
Appellant,
vs.
Conway P. Coe, Commissioner of Patents.

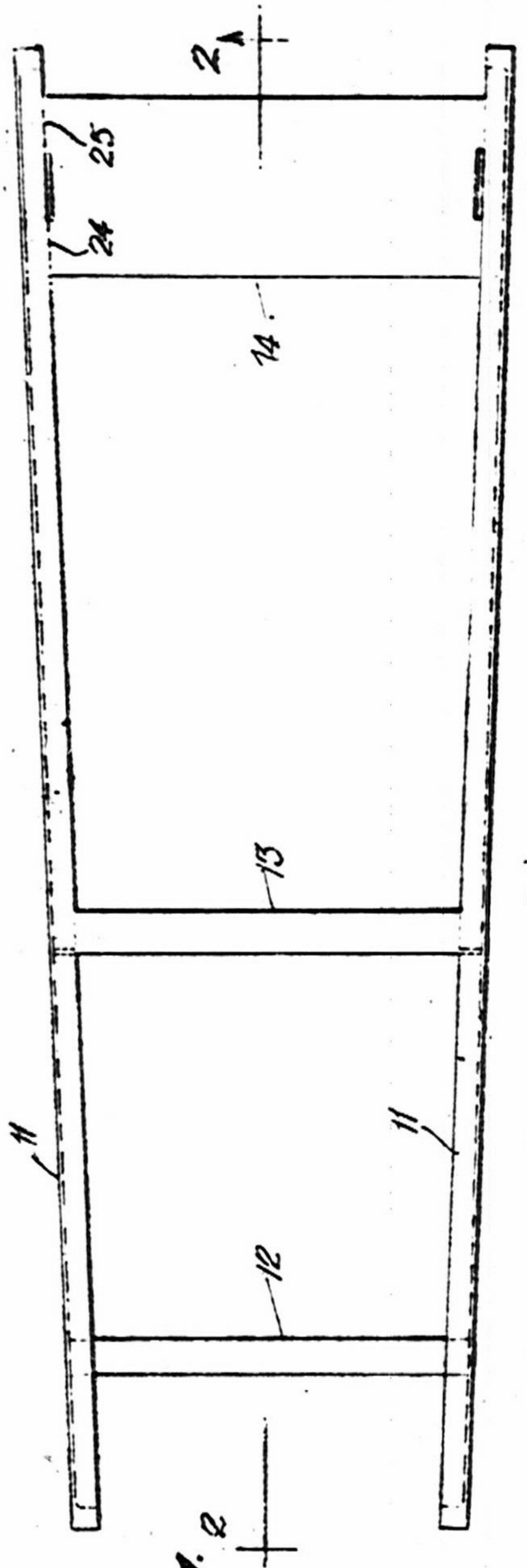


Fig. 1.

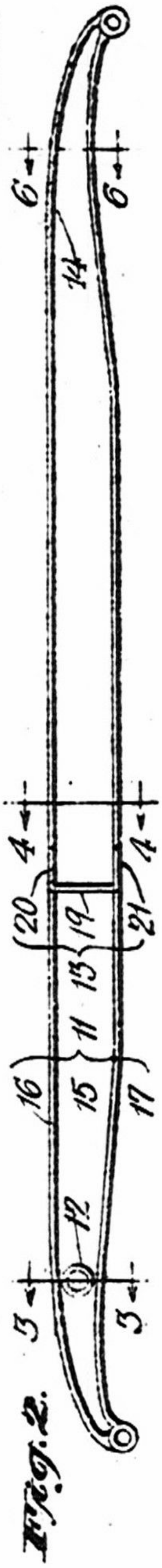


Fig. 2.

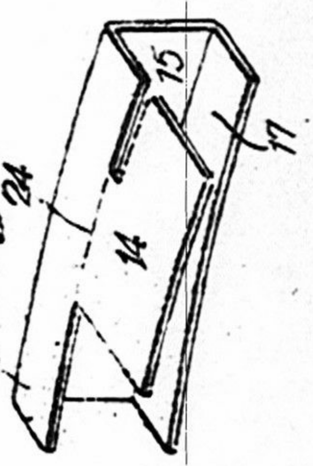


Fig. 6.

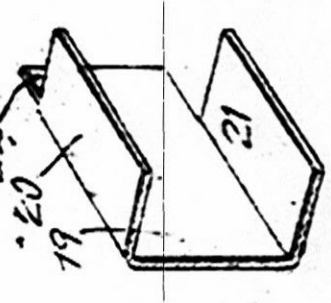


Fig. 5.

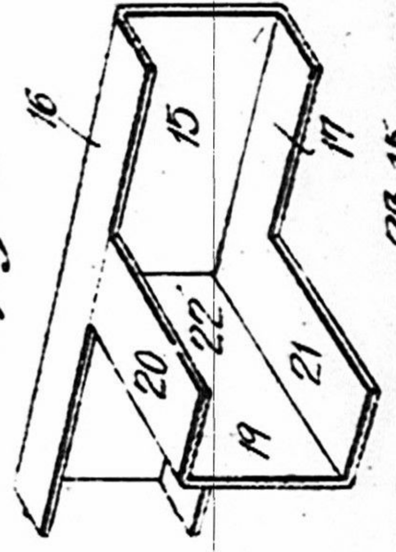


Fig. 4.

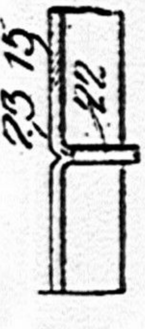


Fig. 4a

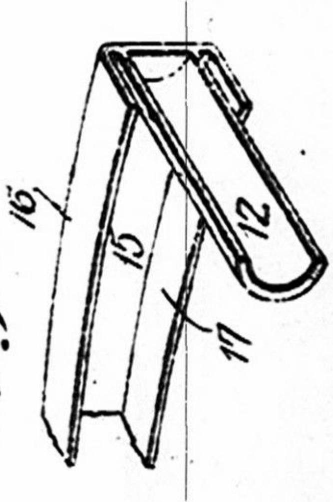


Fig. 3.

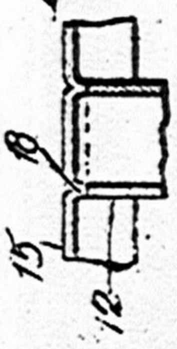


Fig. 3a

Inventor.
THOMAS E. MURRAY JR.
By His Attorneys

281, Metropolitan Engineering Company, Appellant,
vs.
Conway P. Coe, Commissioner of Patents.

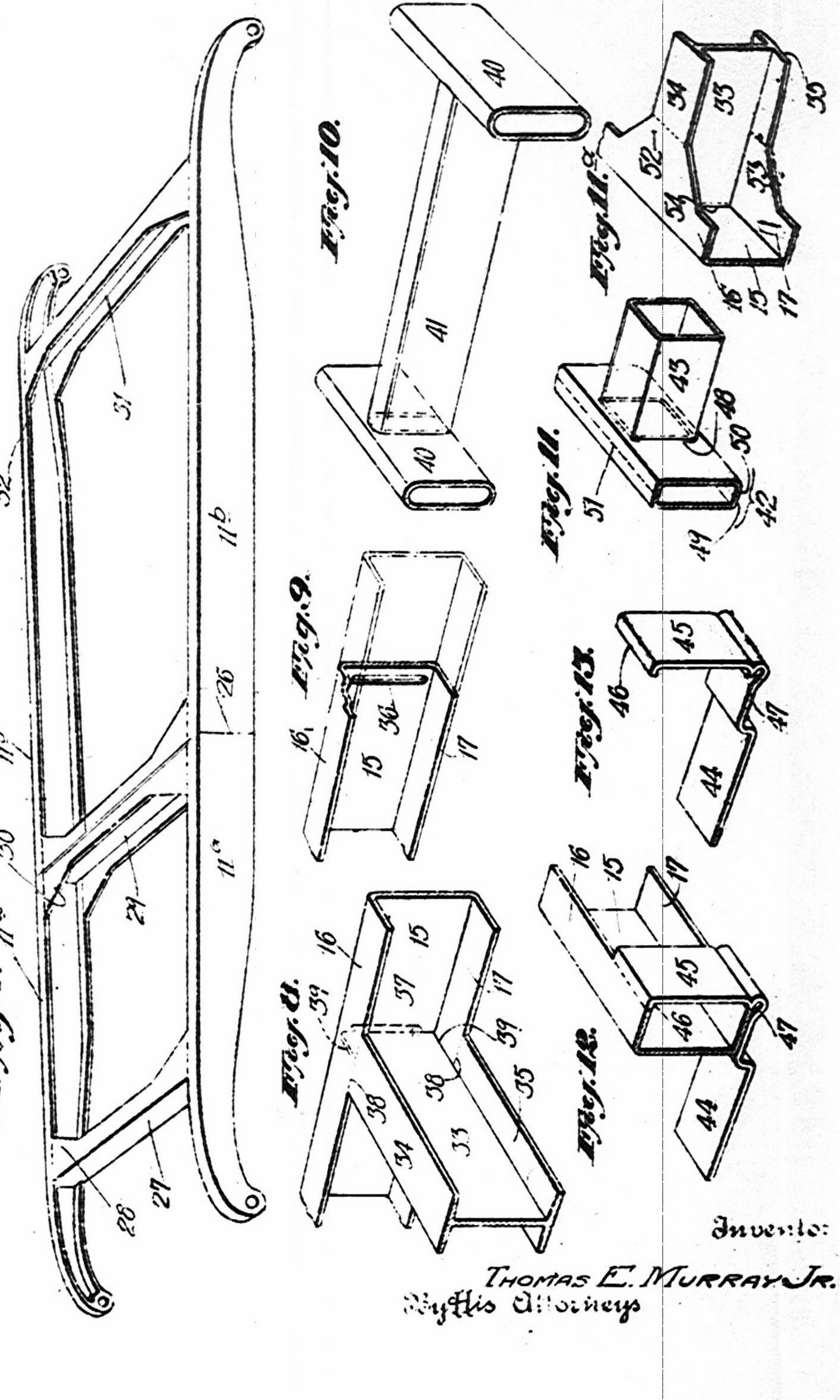


Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 11.a

Fig. 12.

Fig. 13.

Inventor:
THOMAS E. MURRAY JR.
By His Attorneys

30 P/AH.

Department of Commerce, U. S. Patent Office, Washington, D. C.

In re Application of Thomas E. Murray, Jr. Ser. No. 416,988. Filed Dec. 27, 1929. For Manufacture of Automobile Frames.

Nov. 20, 1930.

Examiner's Statement.

To the Board of Appeals:

This is an appeal from the decision of the Primary Examiner in finally reject*ed* all of the claims in the above identified application.

The alleged invention relates to chassis frames for automobiles and consists essentially of the feature of wel-ing together the side members and cross members of the frame. The principal feature lies in butt welding the flanges of the cross members to the flanges of the side members so that the upper and lower flanges of the side members are in the same planes as the respective flanges of the cross members. Another feature lies in the attachment of a bracket as shown in Fig. 13 to the side member as shown in Fig. 14. The bracket is butt welded to the side member as at 46 and 47.

A clean copy of the appealed claims follows:

1. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

31 2. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded to the faces of the vertical portions and to the edges of the horizontal portions of said longitudinal members.

3. A frame for automobiles having members of sheet metal bent to form flanges, in combination with a bracket of sheet metal having edges butt-welded to the edges of said flanges.

4. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having portions in the plane of the flanges of said longitudinal members and butt-welded edge-to-edge thereto.

5. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having vertical edges butt-welded to the inner faces of the vertical portions of said channels, and having horizontal portions in the plane of the flanges of said channels and butt-welded edge to edge thereto.

6. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with horizontal flanges extending inward, and transverse braces having horizontal portions in the plane of the flanges of said longitudinal members, the ends of said horizontal portions abutting against the inner edges of said flanges.

7. A frame for automobiles having longitudinal members the cross section of each of which is composed of a single piece of metal of hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

8. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of metal of hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded to the faces of the vertical portions and to the edges of the horizontal portions of said longitudinal members.

9. A frame for automobiles having members with flanges in combination with a bracket having edges butt-welded to the edges of said flanges.

10. A frame for automobiles having longitudinal members with inwardly projecting horizontal flanges at the upper edge and having transverse braces with horizontal flanges in the plane of the said horizontal flanges of the longitudinal members and butt-welded edge-to-edge thereto.

32 11. A frame for automobiles having longitudinal members with inwardly projecting horizontal flanges at the upper and lower edges and having transverse braces with horizontal flanges located respectively in the planes of the horizontal flanges of the longitudinal members and butt-welded edge-to-edge thereto.

12. A frame for automobiles having longitudinal members, the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and having a transverse brace located at an intermediate point in the length of the frame, said brace having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

13. A frame for automobiles having longitudinal members the cross-section of each of which is of channel shape with the flanges extending inward and having a transverse brace located at an intermediate point in the length of the frame, said brace having portions in the plane of the flanges of said longitudinal members and butt-welded edge-to-edge thereto.

14. A frame for automobiles having longitudinal members, the cross-section of each of which is composed of a single piece of metal of hollow shape with horizontal portions and having a transverse brace located at an intermediate point in the length of the frame, said transverse brace having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

The references relied on are:

Klopp, 1,149,069, Aug. 3, 1915;
Schmidt, 924,941, June 15, 1909;
Chesnutt, 991,137, May 2, 1911.

Claims 1, 2, 4, 7, 10, and 11 are substantially the same. These claims call for a frame for automobiles having longitudinal members, the cross section of each of which is composed of a single piece of metal bent to hollow shape with vertical and horizontal portions, and transverse braces having edges butt welded to the horizontal portions of the longitudinal members and butt welded edge to edge thereto.

Schmidt shows a frame having every feature of these claims except the means of attachment of the side and cross

members. Side bars 10 of channnel (hollow) shape
33 are shown, and transverse braces 11 having upper
and lower flanges in the planes of the respective side members. The ends of the cross members 11 and side members 10 are mitred and butted against each other. They are then held in place by gussets. The question now is whether it is invention to weld these members together instead of rivetting them to gusset plates. It is believed that this is not invention. It is old to weld metal members together. Not only is it old to weld metal members, but it is old to weld cross members and side members of a vehicle body frame together, since Klopp teaches that idea, and Chesnutt even shows the butt welding of a mitred joint on a vehicle frame. Figs. 5 and 6 of Chesnutt show this joint. Thus it is believed that only mechanical skill would be required in welding Schmidt's members 10 and 11 together.

Claims 5, 6, and 8 are substantially the same as claims 1, 2, 4, 7, 10, and 11 except that they add that the edges of the cross members are butt welded to the vertical faces of the side members. This is shown particularly in Fig. 4 of applicant's drawing. The tongue 22, an extension of web 19 of the cross member extends to the web of the channel side member 15 and is welded thereto. This feature is shown by Schmidt, for the webs, or vertical portions, of the side and cross members contact at the extreme outer corner of the frame.

Claims 3 and 9 are drawn ostensibly to the feature shown in Figs. 12 and 13 of applicant's drawings. These show a bracket 45 welded at 46 and 47 to the flanges of the side
members. These two claims call for a bracket having
34 flanges or edges butt welded to the flanges of the side
members. The term bracket is very broad and it is believed that member 11 of Schmidt can be called a bracket. If so, the structure defined by these claims is met and it is not invention to weld, instead of rivet, the bracket 11 to side member 10.

Claims 12-14 attempt to define novel structure by stating that the cross members, or transverse braces, are intermediate the ends of the side or longitudinal members. The common form of vehicle chassis is composed of two longitudinal side frame members and a plurality of transverse braces. Schmidt shows such a structure. It is not seen where any invention resides in using intermediate transverse braces of the same size as the end members. These cross members must obviously be cut square across at the ends instead of mitred as members 11 are. However, this would be mere mechanical skill.

The entire issue presented in claims 1 to -1 amounts only to welding of Schmidt's cross members 11 to the side members 10. In claims 12 to 14 the cross members are stated to be intermediate the ends of the side members, which does not add to the patentability of these claims, for it is old to so locate the cross members.

If it ever amounted to invention to weld the members of a chassis frame together, it surely does not now or did not when the original of this application was filed, for welding has become common in the art. Various methods of weld-
ing have become so common that it is used often to
35 the entire exclusion of other means of connecting two
members.

Thus the alleged invention substitutes one common securing means for another. For these reasons it is believed that the claims are properly rejected and the decision of the Primary Examiner should be sustained.

Respectfully,

——— ———,
Examiner, Div. 10.

36 [Stamp:] U. S. Patent Office, Board of Appeals. Mailed Jul. 27, 1931.

OVT.

Hearing: July 15, 1931.

In the United States Patent Office.

Before the Board of Appeals.

Ex parte Thomas E. Murray, Jr.

Appeal No. 942.

Application for Patent Filed December 27, 1929. Serial No. 416,988. For Reissue of Patent No. 1,723,518 of August 6, 1929. Manufacture of Automobile Frames.

Messrs. Usina & Rauber for applicant.

This is an appeal from the decision of the Primary Examiner finally rejecting claims 1-14 inclusive.

Claims 1 and 5 are illustrative and are:

1. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

5. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having vertical edges butt-welded to the inner faces of the vertical portions of said channels, and having horizontal portions in the plane of the flanges of said channels and butt-welded edge to edge thereto.

37 The references relied upon are:

Schmidt, 924,941, June 15, 1909;
Chesnutt, 991,137, May 2, 1911;
Klopp, 1,149,069, Aug. 3, 1915.

The invention is a classis frame for an automobile. It comprises longitudinal side members each made from sheet metal bent to provide a central vertical portion and parallel horizontal flange portions at the top and bottom. These members are connected by transverse braces which have similar vertical and horizontal portions. The horizontal portions of the side members and the transverse members lie in the same plane and are butt welded edge to edge. The vertical portions of the side and transverse members are also welded together. A bracket of sheet metal is welded to the edges of the horizontal portions of the side member.

The principal reference which the examiner relies upon is the Schmidt patent. It discloses a chassis frame with side members having inwardly extending top and bottom flanges. Transverse braces of inverted U-shape have flanges at their ends riveted to the vertical portions of the side members. Gusset plates are also laid over their ends and are riveted to them and to the upper flange of the side members. The gusset plates and transverse braces lie between the flanges of the side members.

Claims 1, 4, 7, 10, 11, 12, 13 and 14 cover the combination of the longitudinal side members and the transverse brace members, and include the limitation that the horizontal portions of the members are butt welded 38 edge to edge. Claims 2, 5 and 8 include the additional limitation that the vertical portions of the members are welded together. These claims may be considered together. The examiner holds that no invention is involved to weld the ends of the transverse braces 12 in Schmidt to the vertical portion of the side member 10 and to weld the gusset plates to the edges of the flanges instead of riveting them to the flanges.

To show instances of welding the patents to Chesnutt and Klopp are cited. The former shows an angle formed on an angle bar in Figs. 5 and 6 by cutting out a triangular piece from the web and bending the angle bar and welding the adjacent edges of the web together.

The Klopp patent discloses a double frame united together. The outer frame 2 is made up of channel irons. At the lower end of Fig. 3 the channel iron is shown bent so that the flanges of the end and side bar lie in the same planes. At the top the channel iron 15 appears to be welded to the side bars so their flanges lie in the same plane. The inner frame is provided with transverse braces U-shaped in cross section which are welded at their ends to the vertical portion of the side bars.

The Schmidt patent shows a structure in which there is a union between the ends of the braces 12 and the vertical portion of the side members 10, and also a union 39 between the horizontal portion on the braces (gusset plates) and the flange 13. It is true that the gusset plates do not lie in the plane of the flange 13, nor are the parts butt welded together. However, we are unable to see any invention in these changes. If welding is used it would be obvious to arrange the gusset plates in the plane of the flange. Butt welding has come into such common usage at the present time that it is difficult to see that any invention can possibly reside in resorting to this well known expedient. The welding of the ends of the braces to the vertical portion of the side members is fully set forth in Klopp. This patent also suggests the arrangement of the flanges of the side members and of the transverse members in the same plane and connected together in his Fig. 3. The transverse members in this figure are the end bars but they still would suggest to a skilled mechanic the advantage of connecting transverse braces to the side members in a similar member. It is noted that the Schmidt patent does not have gusset plates at the lower side of the braces 12 but this is merely an extension of an old idea. At the ends of the frame there are triangular plates connecting the end bars to both flanges. We are unable to find anything patentable in this group of claims.

Claim 6 does not state anything about how the parts are connected. We do not regard this claim patentable over Schmidt.

40 Claims 3 and 9 include the bracket welded to the edges of the flanges on the side bars. As the term "bracket" has a broad meaning, the examiner's rejection of these claims on Schmidt is also believed to be proper.

The decision of the examiner is affirmed.

WM. A. KINNAN,
First Assistant Commissioner,
W. L. REDROW,
Examiner-in-Chief,
F. P. EDINBURG,
Examiner-in-Chief,
Board of Appeals.

July 27, 1931.

41 Filed May 11, 1934. Frank E. Cunningham, Clerk.

3398-R.

Application for United States Letters Patent.

Petition for Reissue With Power of Attorney.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

Your petitioner, Thomas E. Murray, Jr., a citizen of the United States and resident of Brooklyn, County of Kings and State of New York, and whose post office address is 1250 Atlantic Ave., Brooklyn, New York, prays that he may be allowed to surrender the Letters Patent for Improvements in Manufacture of Automobile Frames granted to him August 6, 1929, No. 1,723,518, whereof he is now sole owner, and that Letters Patent may be reissued to him for the same invention upon the annexed amended specification. With this Petition is filed an abstract of title, duly certified, as required in such cases.

And he hereby appoints Usina & Rauber, a firm consisting of D. Anthony Usina and Benjamin T. Rauber, 71 Broadway, New York City, New York, his attorneys, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to sign the drawings, to receive the Letters Patent when issued, and to transact all business in the Patent Office connected therewith.

Signed at New York City, New York, this 23rd day of December, 1929.

(Sgd.) THOMAS E. MURRAY, Jr.

42 *Specification.*

To all whom it may concern:

Be it known that I, Thomas E. Murray, Jr., a citizen of the United States and a resident of Brooklyn, County of Kings, State of New York, have invented certain new and useful Improvements in Manufacture of Automobile Frames of which the following is a specification.

My invention aims to provide certain improvements in the manufacture of frames for automobiles whereby th*an* can be made very economically.

The accompanying drawings illustrate embodiments of the invention.

Fig. 1 is a plan of a frame;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Figs. 3 and 4 are sections in perspective on the correspondingly numbered lines in Fig. 2;

Figs. 3a and 4a are horizontal sections through the joints illustrated in Figs. 3 and 4 respectively;

Fig. 5 is a detail of a part of Fig. 4;

Fig. 6 is a section in perspective on the line 6—6 of Fig. 2;

Fig. 7 is a perspective view of another design of frame;

Fig. 8 is a perspective view of a modification in detail;

Fig. 9 is a separate perspective of the side member of Fig. 8;

43 Fig. 10 is a perspective of a frame made of hollow or tubular members;

Fig. 11 is a perspective of a joint between hollow members;

Fig. 11a is a perspective of a joint between members of another shape;

Fig. 12 is a similar view of a step or bracket or the like applied to one of the members of a frame, and

Fig. 13 is a similar view of the same step before application.

Referring first particularly to Figs. 1 to 6, the frame comprises a pair of longitudinal members indicated as a whole by the numeral 11 and united at intervals by transverse braces 12, 13 and 14, the ends of which are butt welded to appropriate parts of the longitudinal or side members. The shapes of the parts may be varied considerably according to the design of the cars for which they are intended or the choice of the designer, and the welded joint may be varied to suit the shapes of the parts.

The side members 11 are made of sheet metal bent or drawn to provide a vertical web 15 and horizontal top and bottom flanges 16 and 17 which converge at the ends where the frame usually has its bearings on the springs. This is of comparatively simple channel shape in cross section.

Various other hollow shapes may be utilized.

44 The transverse brace 12 at the front end is a straight tube fitting between the flanges of the side members and having its ends butt welded directly to the vertical web 15. Preferably, in order to facilitate the welding operation the web is formed with a raised rib 18 (Fig. 3a) fitting the end of the circular brace 12 and to which the latter is directly welded.

The intermediate transverse member 13 is a straight channel with a web 19 identical in height with the web 15 at the point of contact with the latter and with flanges 20 and 21 which when the parts are united engage the flanges 16 and 17. The shape of the brace before welding is shown in Fig. 5, with a tongue 22 constituting an extension of the web to engage a rib 23, Fig. 4a, formed on the inner face of the web 15 of the side member. The welded joint is made between the end of the part 22 and the rib 23, and also along the contact edges of the flanges 20 and 21 with the flanges 16 and 17.

The rear brace 14 is preferably made in the form of a broad plate bent to the contour of the upper flanges 16 of the side members and butt welded at its ends to said flanges. The weld may extend continuously from end to end of the joint, but the principal strain is near the ends of the joint and for mechanical reasons it is better to interrupt the contact at the center and to make two welds 24 and 25 near the ends.

45 According to Fig. 7 the side members are of substantially the same shape as in Figs. 1 and 2, but for simplicity in the shaping operation they are made in two parts 11a and 11b constituting the front and the rear portions respectively which are butt-welded to each other at the joint 26. Also I use this figure to illustrate the application of the invention with braces of a different shape from those shown in Fig. 2. The forward brace 27 is a channel with its web entering between the flanges of the side members and with its flanges having ends 28 flared to an increased width where they make contact with and are welded to the flanges of the side members. The intermediate brace 29 is in the form of an I-beam (either rolled in one piece or built up of two channels arranged back to back) with its web also extending between the flanges of the side members and with its flanges having end portions 30 of increased width where they abut against and are welded to the flanges of the side members. The use of such a transverse brace extending across the joint 26 between the front and rear parts of the side members, reinforces this joint. The rear brace 31 is similar to the front brace being of channel shape with its web extending between the flanges of the side members and welded to the web of the latter and with its flanges having end portions 32 of increased width at the joints with the flanges of the side members. The several braces in Fig. 7 are welded to the side members in the way described in connection with Fig. 1, or the joints may be made in various other ways.

46 Figs 8 and 9 illustrate an alternative style of joint between side members having webs 15 and flanges 16 and 17 and a transverse brace in the shape of an I-beam with a web 33 and top and bottom flanges 34 and 35. In this case the web 15 of the side member is provided with an opening 36 of approximately its full height and adapted to receive a tongue 37 constituting an extension of the web 33 beyond the point where the latter abuts against the web 15 of the side frame. The weld in this case may be made

along the meeting lines 38 between the flanges of the brace and the flanges of the side members and also along the lines 39 where the extended portion of the web 33 of the brace bears against the inner faces of the flanges of the side members.

The idea is applicable, as stated above, to members which are of various shapes in cross-section. In Fig. 10, there are shown side members 40 of oblong tubular cross-section united by a brace 41 of similar cross-section; the ends of the latter being welded directly to the inside vertical portions of the side members.

In Fig. 11 the same idea is shown applied to side members 42 of rectangular cross-section, united by a transverse brace 43 of square cross-section with its ends welded to the inner vertical portions of the side members.

47 The closed hollow shapes of Figs. 10 and 11 may be made of sheet metal bent to shape and welded at the edges like ordinary welded tubing or they may be made of drawn seamless tubing.

The idea of applying extensions to the longitudinal members, to which the transverse braces are welded, may be carried out in a variety of ways.

In Fig. 11 there is shown a rib 48 on the inner face of the longitudinal member, to which the end of the cross member 43 is directly welded. This figure is also used to illustrate a longitudinal member 42 made of two sheet metal segments 49 and 50 bent to form flanges which are welded together along their edges, the joint being indicated by the dotted lines 51.

A different style of lateral extension from the longitudinal members is illustrated in Fig. 11a. This shows a channel with a web 15 and flanges 16 and 17. The latter, however, are provided with extensions 52 and 53 at top and bottom, preferably tapering as shown, to which the ends of the flanges of the cross members 33, 34 and 35 are welded. There is also a raised rib 54 or inward extension on the web of the longitudinal member, to which the end of the web of the transverse member is welded.

Extensions of this sort provide a better resistance to the stresses which occur; or conversely they make the joint at a point nearer the longitudinal center of the frame where the stresses are less than at points remote from such center.

48 I have shown the frames of conventional designs. But it will be understood that the invention is applicable to various other types of frame, and I have used the expression longitudinal members to apply to the side members whether they extend in a truly longitudinal direction or not; and the expression transverse braces to apply to members which extend across between the side members whether they are exactly transverse or not.

The invention may be extended with advantage not only to the making of the principal parts of the frame, but also to the making of frames with special details or extensions such as brackets for engagement with other parts, steps and the like. An example is shown in Figs. 12 and 13 where a step 44 is provided with a flange 45 extending up inside of one of the longitudinal members and having edges 46 and 47 welded to the edges of the flanges 16 and 17 of the side member.

Though I have described with great particularity of detail certain specific embodiments in my invention, yet it is not to be understood that the invention is restricted to the particular embodiments disclosed. Various modifications thereof in detail and in the arrangement of the parts may be made by those skilled in the art without departure from the invention as defined in the following claims.

49 What I claim is:

1. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

2. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded to the faces of the vertical portions and to the edges of the horizontal portions of said longitudinal members.

3. A frame for automobiles having members of metal to form flanges, in combination with a bracket having edges butt-welded to the edges of said flanges.

4. A frame for automobiles having longitudinal members the cross-section of each of which is of channel shape with

the flanges extending inward, and transverse braces having portions in the plane of the flanges of said longitudinal members and butt-welded edge-to-edge thereto.

5. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having vertical edges butt-welded to the inner faces of the vertical portions of said channels, and having horizontal portions in the plane of the flanges of said channels and butt-welded edge to edge thereto.

50 6. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with horizontal flanges extending inward, and transverse braces having horizontal portions in the plane of the flanges of said longitudinal members, the ends of said horizontal portions abutting against the inner edges of said flanges.

7. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of metal of hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

8. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of metal of hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded to the faces of the vertical portions and to the edges of the horizontal portions of said longitudinal members.

9. A frame for automobiles having members with flanges in combination with a bracket having edges butt-welded to the edges of said flanges.

51 10. A frame for automobiles having longitudinal members with inwardly projecting horizontal flanges at the upper edge and having transverse braces with horizontal flanges in the plane of the said horizontal flanges of the longitudinal members and butt-welded edge-to-edge thereto.

11. A frame for automobiles having longitudinal members with inwardly projecting horizontal flanges at the upper and lower edges and having transverse braces with horizontal flanges located respectively in the planes of the

horizontal flanges of the longitudinal members and butt-welded edge-to-edge thereto.

52 In witness whereof I have hereunto signed my name.

THOMAS E. MURRAY, Jr.

Oath.

State of New York,
County of New York, ss:

Thomas E. Murray, Jr., the above named petitioner, being duly sworn, deposes and says that he believes himself to be the original, first and sole inventor of the improvement set forth and claimed in the foregoing specification and for which improvement he solicits a patent; that he does not know and does not believe that said improvement was ever before known or used; that he is a citizen of the United States of America and resides at Brooklyn, County of Kings and State of New York; that he verily believes that the Letters Patent referred to in the foregoing specification and herewith surrendered are inoperative for the reason that the specification thereof is defective or insufficient and that said defect or insufficiency consists particularly in this—that claims 1, 2 and 3 of said patent are unnecessarily restricted to sheet metal bent to the shape required whereas the invention includes such members whether made in the way specifically stated or otherwise as expressed more broadly in the additional claims submitted with the present application and numbered 7, 8, 9, 10 and 11; and deponent further says that the errors which render such patent so inoperative arose from inadvertence, accident or mistake and without any fraudulent or deceptive intention on the part of deponent; that the following is a true specification of the errors which it is claimed constitute such inadvertence, accident or mistake relied upon: The errors consisted in introducing into said claims 1, 2 and 3 limitations which were not the intention of deponent; and that such errors so particularly specified occurred as
53 follows: Deponent in describing his invention to his
attorney for the purpose of preparing the original application for patent described the parts with particular reference to the embodiment of the invention which he had drawn up in which the longitudinal members were made of

a single piece of metal bent to the shapes stated but not intending that this particular method of making the members was an essential part of the invention, intending on the other hand that the invention should be understood as including the members in question however made, that deponent's attornet was thus led erroneously to assume that the specific method of making the members in question was an essential characteristic of the invention, contrary to the intention of deponent.

THOMAS E. MURRAY, Jr.

Subscribed and sworn to before me this 23rd day of December, 1929.

WILLIAM X. SEEWAGEN,
Notary Public.

54 [Stamp:] U. S. Patent Office, Board of Appeals. Mailed Jul. 27, 1931.

OVT.
Hearing: July 15, 1931.

In the United States Patent Office.

Before the Board of Appeals.

Ex parte Thomas E. Murray, Jr.

Appeal No. 942.

Application for Patent Filed December 27, 1929. Serial No. 416,988. For Reissue of Patent No. 1,723,518 of August 6, 1929. Manufacture of Automobile Frames.

Messrs. Usina & Rauber for applicant.

This is an appeal from the decision of the Primary Examiner finally rejecting claims 1-14 inclusive.

Claims 1 and 5 are illustrative and are:

1. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

5. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having vertical edges butt-welded to the inner faces of the vertical portions of said channels, and having horizontal portions in the plane of the flanges of said channels and butt-welded edge to edge thereto.

55 The references relied upon are:

Schmidt, 924,941, June 15, 1909;
Chesnutt, 991,137, May 2, 1911;
Klopp, 1,149,069, Aug. 3, 1915.

The invention is a chassis frame for an automobile. It comprises longitudinal side members each made from sheet metal bent to provide a central vertical portion and parallel horizontal flange portions at the top and bottom. These members are connected by transverse braces which have similar vertical and horizontal portions. The horizontal portions of the side members and the transverse members lie in the same plane and are butt welded edge to edge. The vertical portions of the side and transverse members are also welded together. A bracket of sheet metal is welded to the edges of the horizontal portions of the side member.

The principal reference which the examiner relies upon is the Schmidt patent. It discloses a chassis frame with side members having inwardly extending top and bottom flanges. Transverse braces of inverted U-shape have flanges at their ends riveted to the vertical portions of the side members. Gusset plates are also laid over their ends and are riveted to them and to the upper flange of the side members. The gusset plates and transverse braces lie between the flanges of the side members.

Claims 1, 4, 7, 10, 11, 12, 13 and 14 cover the combination of the longitudinal side members and the transverse
56 brace members, and include the limitation that the
horizontal portions of the members are butt welded edge to edge. Claims 2, 5 and 8 include the additional limitation that the vertical portions of the members are welded together. These claims may be considered together. The examiner holds that no invention is involved to weld the ends of the transverse braces 12 in Schmidt to the vertical

portion of the side member 10 and to weld the gusset plates to the edges of the flanges instead of riveting them to the flanges.

To show instances of welding the patents to Chesnutt and Klopp are cited. The former shows an angle formed on an angle bar in Figs. 5 and 6 by cutting out a triangular piece from the web and bending the angle bar and welding the adjacent edges of the web together.

The Klopp patent discloses a double frame united together. The outer frame 2 is made up of channel irons. At the lower end of Fig. 3 the channel iron is shown bent so that the flanges of the end and side bar lie in the same planes. At the top the channel iron 15 appears to be welded to the side bars so their flanges lie in the same plane. The inner frame is provided with transverse braces U-shaped in cross section which are welded at their ends to the vertical portion of the side bars.

The Schmidt patent shows a structure in which there is a union between the ends of the braces 12 and the vertical portion of the side members 10, and also a union be-
57 tween the horizontal portion on the braces (gusset
plates) and the flange 13. It is true that the gusset plates do not lie in the plane of the flange 13, nor are the parts butt welded together. However, we are unable to see any invention in these changes. If welding is used it would be obvious to arrange the gusset plates in the plane of the flange. Butt welding has come into such common usage at the present time that it is difficult to see that any invention can possibly reside in resorting to this well known expedient. The welding of the ends of the braces to the vertical portion of the side members is fully set forth in Klopp. This patent also suggests the arrangement of the flanges of the side members and of the transverse members in the same plane and connected together in his Fig. 3. The transverse members in this figure are the end bars but they still would suggest to a skilled mechanic the advantage of connecting transverse braces to the side members in a similar member. It is noted that the Schmidt patent does not have gusset plates at the lower side of the braces 12 but this is merely an extension of an old idea. At the ends of the frame there are triangular plates connecting the end bars to both flanges. We are unable to find anything patentable in this group of claims.

Claim 6 does not state anything about how the parts are connected. We do not regard this claim patentable over Schmidt.

58 Claims 3 and 9 include the bracket welded to the edges of the flanges on the side bars. As the term "bracket" has a broad meaning, the examiner's rejection of these claims on Schmidt is also believed to be proper.

The decision of the examiner is affirmed.

WM. A. KINNAN,
First Assistant Commissioner,
W. L. REDROW,
Examiner-in-Chief,
F. P. EDINBURG,
Examiner-in-Chief,
Board of Appeals.

July 27, 1931.

59 1. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

2. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded to the faces of the vertical portions and to the edges of the horizontal portions of said longitudinal members.

3. A frame for automobiles having members of sheet metal bent to form flanges, in combination with a bracket of sheet metal having edges butt-welded to the edges of said flanges.

4. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having portions in the plane of the flanges of said longitudinal members and butt-welded edge-to-edge thereto.

5. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having vertical edges butt-welded to the inner faces of the

vertical portions of said channels, and having horizontal portions in the plane of the flanges of said channels and butt-welded edge to edge thereto.

6. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with horizontal flanges extending inward, and transverse braces having horizontal portions in the plane of the flanges of said longitudinal members, the ends of said horizontal portions abutting against the inner edges of said flanges.

7. A frame for automobiles having longitudinal members the cross section of each of which is composed of a single piece of metal of hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

8. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of metal of hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded to the faces of the vertical portions and to the edges of the horizontal portions of said longitudinal members.

9. A frame for automobiles having members with flanges in combination with a bracket having edges butt-welded to the edges of said flanges.

10. A frame for automobiles having longitudinal members with inwardly projecting horizontal flanges at the upper edge and having transverse braces with horizontal flanges in the plane of the said horizontal flanges of the longitudinal members and butt-welded edge-to-edge thereto.

11. A frame for automobiles having longitudinal
60 members with inwardly projecting horizontal flanges
at the upper and lower edges and having transverse
braces with horizontal flanges located respectively in the planes of the horizontal flanges of the longitudinal members and butt-welded edge-to-edge thereto.

12. A frame for automobiles having longitudinal members, the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and having a transverse brace located at an intermediate point in the length of the frame, said brace having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

Aug. 6. **T. E. MURRAY, JR** **1,723,518**

MANUFACTURE OF AUTOMOBILE FRAMES

Filed May 17, 1923 2 Sheets-Sheet 1

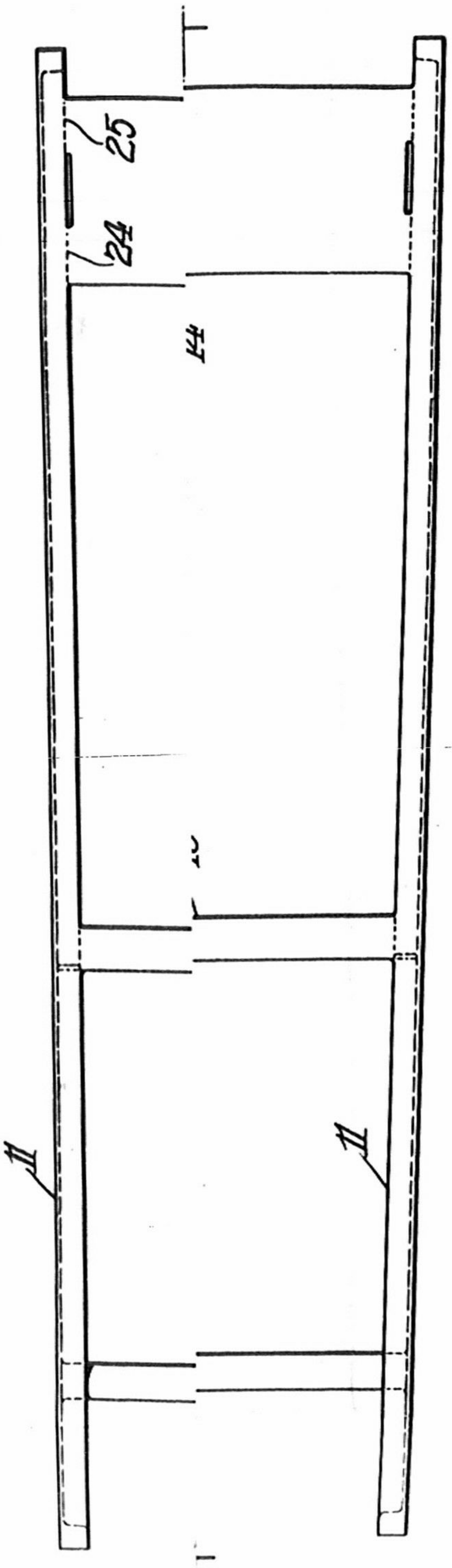


Fig. 1

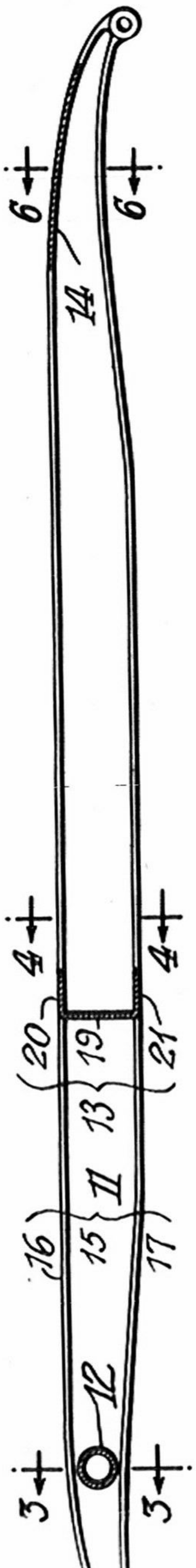


Fig. 2.

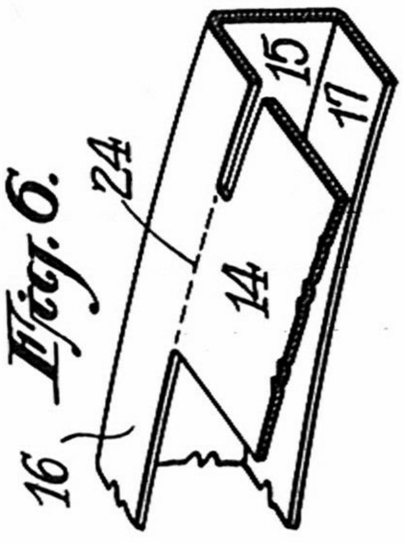


Fig. 6.

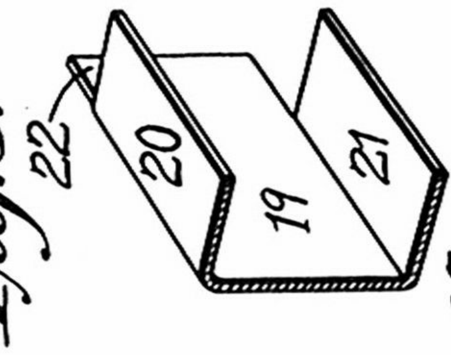


Fig. 5.

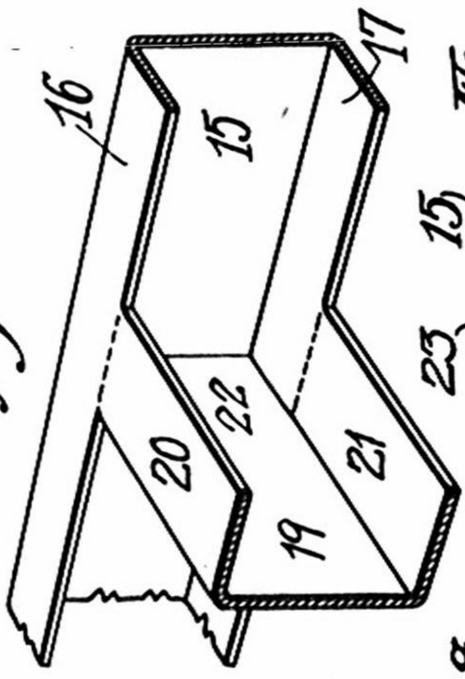


Fig. 4.

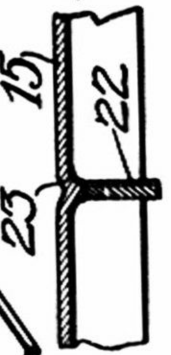


Fig. 4a.

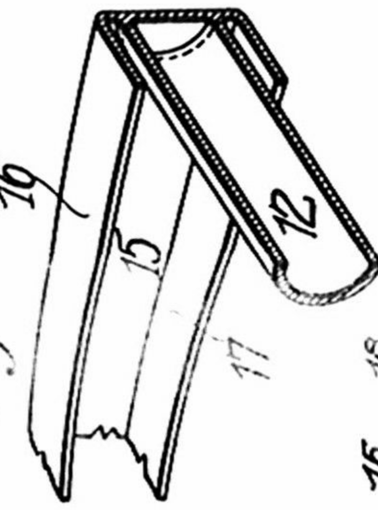


Fig. 3.

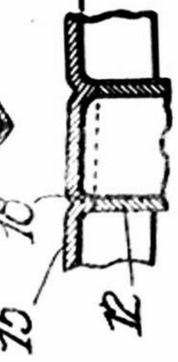


Fig. 3a.

Inventor
Thomas E. Murray, Jr.
By His Attorney
D. Anthony Usina

Aug. 6, 1929.

T. E. MURRAY, JR

1,723,518

MANUFACTURE OF AUTOMOBILE FRAMES

Filed May 17, 1923

2 Sheets-Sheet 2

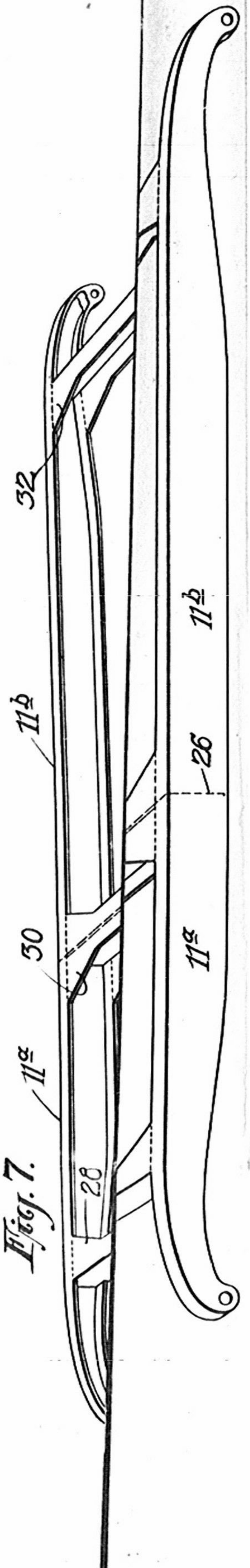


Fig. 7.

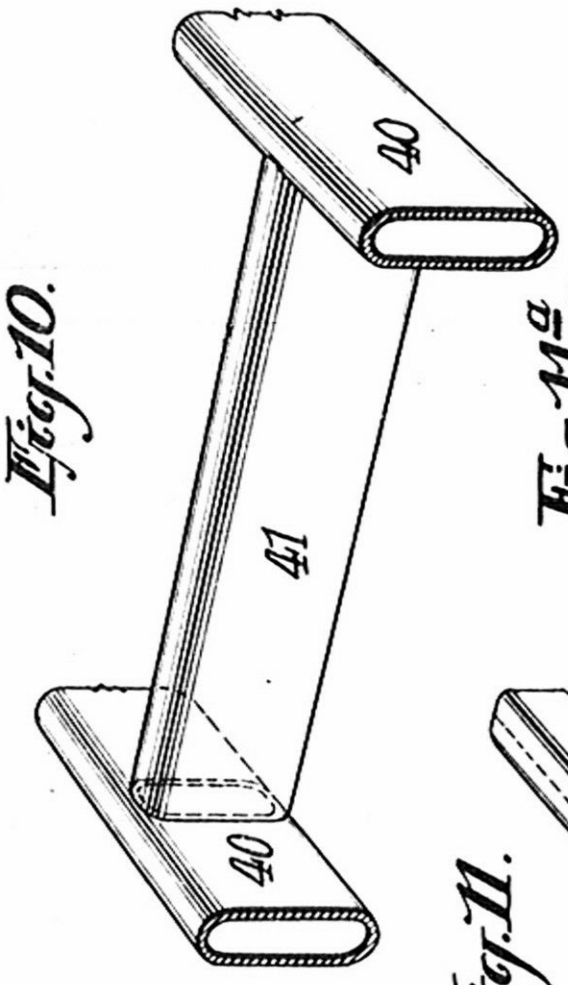


Fig. 10.

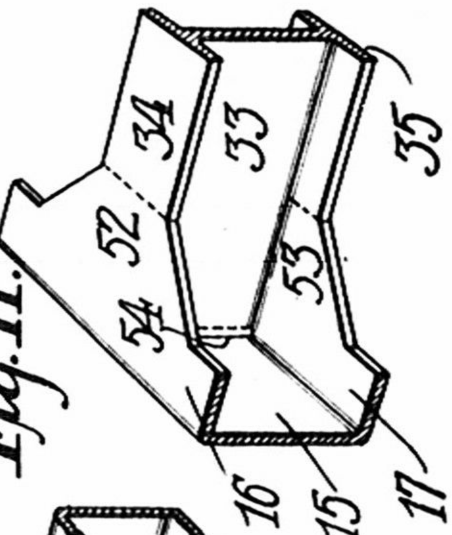


Fig. 11a.

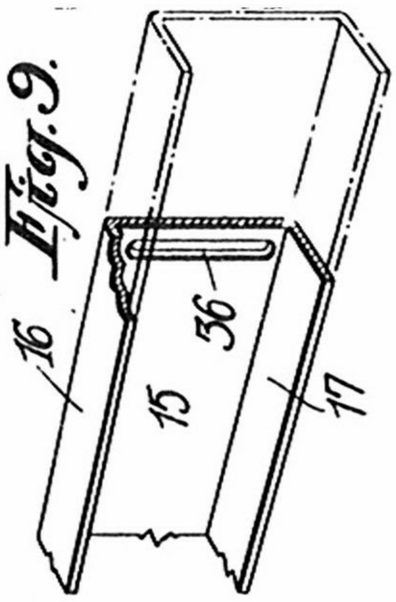


Fig. 9.

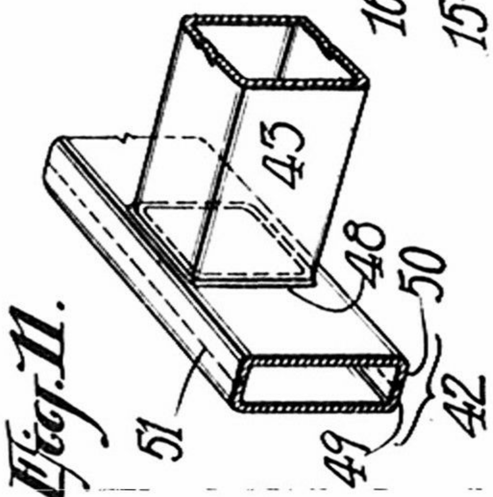


Fig. 11.

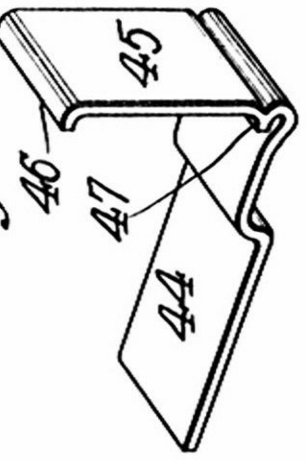


Fig. 13.

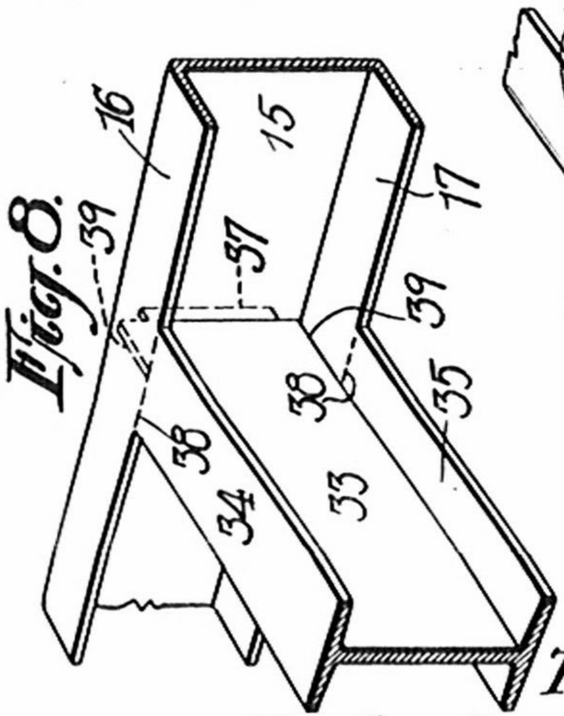


Fig. 8.

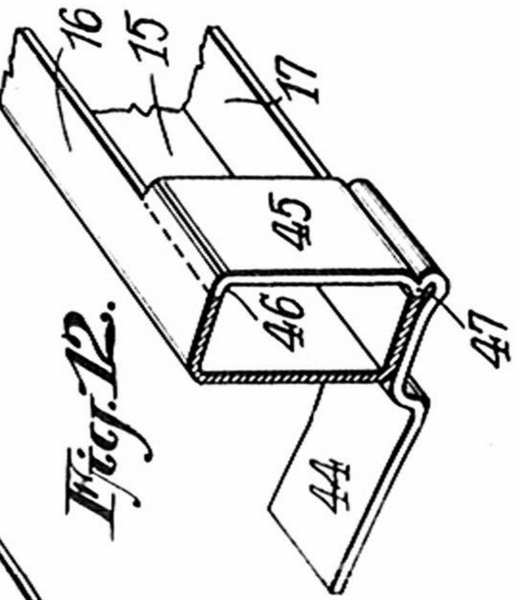


Fig. 12.

Inventor
Thomas E. Murray, Jr.
By His Attorney
D. Anthony Usina

Patented Aug. 6, 1929. **1,723,518**

UNITED STATES PATENT ICE.

THOMAS E. MURRAY, JR., OF NEW YORK, N. Y.

MANUFACTURE OF AUTOMOBILE FRAMES.

Application filed May 17, 1923. Serial No. 639,631.

My invention aims to provide certain improvements in the manufacture of frames for automobiles whereby they can be made very economically.

The accompanying drawings illustrate embodiments of the invention.

Fig. 1 is a plan of a frame;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Figs. 3 and 4 are sections in perspective on the correspondingly numbered lines in Fig. 2;

Figs. 3^a and 4^a are horizontal sections through the joints illustrated in Figs. 3 and 4 respectively.

Fig. 5 is a detail of a part of Fig. 4;

Fig. 6 is a section in perspective on the line 6—6 of Fig. 2;

Fig. 7 is a perspective view of another design of frame;

Fig. 8 is a perspective view of a modification in detail;

Fig. 9 is a separate perspective of the side member of Fig. 8;

Fig. 10 is a perspective of a frame made of hollow or tubular members;

Fig. 11 is a perspective of a joint between hollow members;

Fig. 11^a is a perspective of a joint between members of another shape.

Fig. 12 is a similar view of a step or bracket or the like applied to one of the members of a frame, and Fig. 13 is a similar view of the same step before application.

Referring first particularly to Figs. 1 to 6, the frame comprises a pair of longitudinal members indicated as a whole by the numeral 11 and united at intervals by transverse braces 12, 13 and 14, the ends of which are butt welded to appropriate parts of the longitudinal or side members. The shapes of the parts may be varied considerably according to the design of the cars for which they are intended or the choice of the designer, and the welded joint may be varied to suit the shapes of the parts.

The side members 11 are made of sheet metal bent or drawn to provide a vertical web 15 and horizontal top and bottom flanges 16 and 17 which converge at the ends where the frame usually has its bearings on the springs. This is of comparatively simple channel shape in cross section. Various other hollow shapes may be utilized.

The transverse brace 12 at the front end is a straight tube fitting between the flanges of the side members ving its ends butt welded directly to rtical web 15. Preferably, in order to ate the welding operation the web med with a raised rib 18 (Fig. 3^a) he end of the circular brace 12 and t the latter is directly welded.

The intermediate tra member 13 is a straight channel wit 19 identical in height with the we the point of contact with the latter ith flanges 20 and 21 which when the re united engage the flanges 16 an The shape of the brace before weldin wn in Fig. 5, with a tongue 22 cons an extension of the web to engage a ig. 4^a, formed on the inner face of th 15 of the side member. The welded made between the end of the part 22 e rib 23, and also along the contact of the flanges 20 and 21 with the flan nd 17.

The rear brace 14 is ably made in the form of a broad p t to the contour of the upper fla of the side members and butt weld s ends to said flanges. The weld ma continuously from end to end of th but the principal strain is near the the joint and for mechanical reasons etter to interrupt the contact at th and to make two welds 24 and 25 n nds.

According to Fig. side members are of substantially t shape as in Figs. 1 and 2, but f licity in the shaping operation th made in two parts 11^a and 11^b cons the front and the rear portions re y which are butt-welded to each the joint 26. Also I use this figure ate the application of the inventi braces of a different shape from t wn in Fig. 2. The forward brace 27 nnel with its web entering between es of the side members and with its aving ends 28 flared to an increase where they make contact with a welded to the flanges of the side . The intermediate brace 29 is in of an I-beam (either rolled in one built up of two channels arrange o back) with its web also extendin n the flanges of the side members h its flanges having end portions creased width where they abut agai re welded to the flanges of the siders. The use of such a transverse bending across the joint 26 be he front and rear parts of the side m, reinforces this joint. The rear brac s similar to the front brace in bein hannel shape with its web extendin en the flanges of the side members lded to the web of the latter and wit anges having end portions 32 of i l width at the joints with the flang he side members. The several braces . 7 are welded to the side members way described in connection with or the joints may be made in vario ways.

Figs. 8 and ate an alternative style of joint betwe members having webs 15 and flange d 17 and a transverse brace in the sl an I-beam with a web 33 and top a m flanges 34 and 35. In this case t 15 of the side member is provided w pening 36 of approximately its full and adapted to receive a tongue 37 c ng an extension of the web 33 beyon point where the latter abuts against 15 of the side frame. The weld in t may be made along the meeting lines een the flanges of the brace and the of the side members and also alon ines 39 where the extended portio web 33 of the brace bears against er faces of the flanges of the side m

The idea is ble, as stated above, to members whi of various shapes in cross-section. . 10, there are shown side members oblong tubular cross-section united ace 41 of similar cross-section; the e he latter being welded directly to t vertical portions of the side mem

In Fig. 11 t idea is shown applied to side mem of rectangular cross-section, unite ransverse brace 43 of square cross-s ith its ends welded to the inner vert ions of the side members.

The closed hapes of Figs. 10 and 11 may be ma et metal bent to shape and welded at s like ordinary welded tubing or the made of drawn seamless tubing.

The idea ing extensions to the longitudinal , to which the transverse braces ded, may be carried out in a vari ays.

In Fig. 11 shown a rib 48 on the inner face o gitudinal member, to which the en cross member 43 is directly weld s figure is also used to illustrate a linal member 42 made of two sheet gments 49 and 50 bent to form flang are welded together along their e joint being indicated by the dotted.

A different lateral extension from the longitudi bers is illustrated in Fig. 11^{a}. This shows a channel with a web 15 and flanges 16 and 17. The latter, however, are provided with extensions 52 and 53 at top and bottom, preferably tapering as shown, to which the ends of the flanges of the cross members 33, 34 and 35 are welded. There is also a raised rib 54 or inward extension on the web of the longitudinal member, to which the end of the web of the transverse member is welded.

Extensions of this sort provide a better resistance to the stresses which occur; or conversely they make the joint at a point nearer the longitudinal center of the frame where the stresses are less than at points remote from such center.

I have shown the frames of conventional designs. But it will be understood that the invention is applicable to various other types of frame, and I have used the expression longitudinal members to apply to the side members whether they extend in a truly longitudinal direction or not; and the expression transverse braces to apply to members which extend across between the side members whether they are exactly transverse or not.

The invention may be extended with advantage not only to the making of the principal parts of the frame, but also to the making of frames with special details or extensions such as brackets for engagement with other parts, steps and the like. An example is shown in Figs. 12 and 13 where a step 44 is provided with a flange 45 extending up inside of one of the longitudinal members and having edges 46 and 47 welded to the edges of the flanges 16 and 17 of the side member.

Though I have described with great particularity of detail certain specific embodiments in my invention, yet it is not to be understood that the invention is restricted to the particular embodiments disclosed. Various modifications thereof in detail and in the arrangement of the parts may be made by those skilled in the art without departure from the invention as defined in the following claims.

What I claim is:

1. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and transverse braces having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

2. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with vertical and horizontal portions, and transverse braces having edges butt-welded to the faces of the

vertical portions and to the edges of the horizontal portions of said longitudinal members.

3. A frame for automobiles having members of sheet metal bent to form flanges, in combination with a bracket of sheet metal having edges butt-welded to the edges of said flanges.

4. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and transverse braces having portions in the plane of the flanges of said longitudinal members and butt-welded edge-to-edge thereto.

5. A frame for automobiles having longitudinal members the cross section of each of which is of channel shape with the flanges extending inward, and t e braces having vertical edges butt· to the inner faces of the vertical pc f said channels, and having horizc tions in the plane of the flanges o hannels and butt-welded edge-to-edg.

6. A frame for auton aving longitudinal members the c tion of each of which is of channel s h horizontal flanges extending inw l transverse braces having horizon ions in the plane of the flanges longitudinal members, the ends of izontal portions abutting against er edges of said flanges.

In witness whereof, I eunto signed my name.

THOMAS RAY, Jr.

Div. 10 Room 118

Address only
"The Commissioner of Patents,
Washington, D. C."
and not any official by name

P:TNE·

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON Jan. 8, 1930

Paper No. 2

All communications respecting this application should give the serial number, date of filing, and name of the applicant

Please find below a communication from the EXAMINER in charge of this application.

Thomas E. Robertson
Commissioner of Patents.

GPO 11—

Applicant: T. E. Murray Jr.

Ser. No. 416,988
Filed Dec. 27, 1929
For Manufacture of Automobil Frames -- (Reissue)

Usina & Rauber
71 Broadway
New York, N.Y.

JAN 9 - 1930

JAN 8 - 1930

References made of record:

Lacoin

Lacom	763,494 ✓	June 28, 1904	180-86
Klopp	1,149,069 ✓	Aug. 3, 1915	296-28

Claims 3 and 9 are rejected on Lacom who shows brackets which attach the cross members 2, 8, 9 and 10 to the side members. These brackets are in the plane of the flanges of the side members and it would not be invention to butt weld them thereto

Claims 1, 2, 4-8, 10 and 11 are allowed.

Examiner

3396

13. A frame for automobiles having longitudinal members the cross-section of each of which is of channel shape with the flanges extending inward and having a transverse brace located at an intermediate point in the length of the frame, said brace having portions in the plane of the flanges of said longitudinal members and butt-welded edge-to-edge thereto.

14. A frame for automobiles having longitudinal members, the cross-section of each of which is composed of a single piece of metal of hollow shape with horizontal portions and having a transverse brace located at an intermediate point in the length of the frame, said transverse brace having portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.

(Here follow Patent 1,723,518, side folios 61-66, and photolithograph of side folio 67.)

68 Filed May 11, 1934. Frank E. Cunningham, Clerk.

In the United States Patent Office.

3398.

Applicant: Thomas E. Murray, Jr.
Invention: Manufacture of Automobile Frames.
Examiner's Room No. 118.
Serial No. 416,988.
Filed December 27, 1929.

Affidavit.

State of New York,
County of Kings, ss:

Thomas E. Murray, Jr., being duly sworn, deposes and says:

I am the applicant in the above entitled application. I am President of the Metropolitan Engineering Company, which has been engaged in exploiting this and other inventions.

I have disclosed the frame, covered by the claims in the present application, to automobile engineers and they have expressed both surprise and appreciation of the value of the invention in cutting down the weight of the frames of automobiles, as well as in improving the stiffness of such frames.

I have granted a license for a substantial license fee to General Motors Corporation. They are planning to use the type of construction covered in the claims in the above entitled application. This, of course, involves changes in design and in equipment. The change in practice cannot be accomplished quickly. But I am assured that they are proposing to make the change as soon as it is practicable.

THOMAS E. MURRAY, Jr.

Sworn to and subscribed before me this 14 day of July, 1930.

STEPHEN S. McCARTHY,
Notary Public.

69 Filed May 11, 1934. Frank E. Cunningham, Clerk.

4113.

In the Supreme Court of the District of Columbia.

In Equity.

No. 53,944.

Metropolitan Engineering Company, Plaintiff,

vs.

Conway P. Coe, Commissioner of Patents, Defendant.

Stipulation.

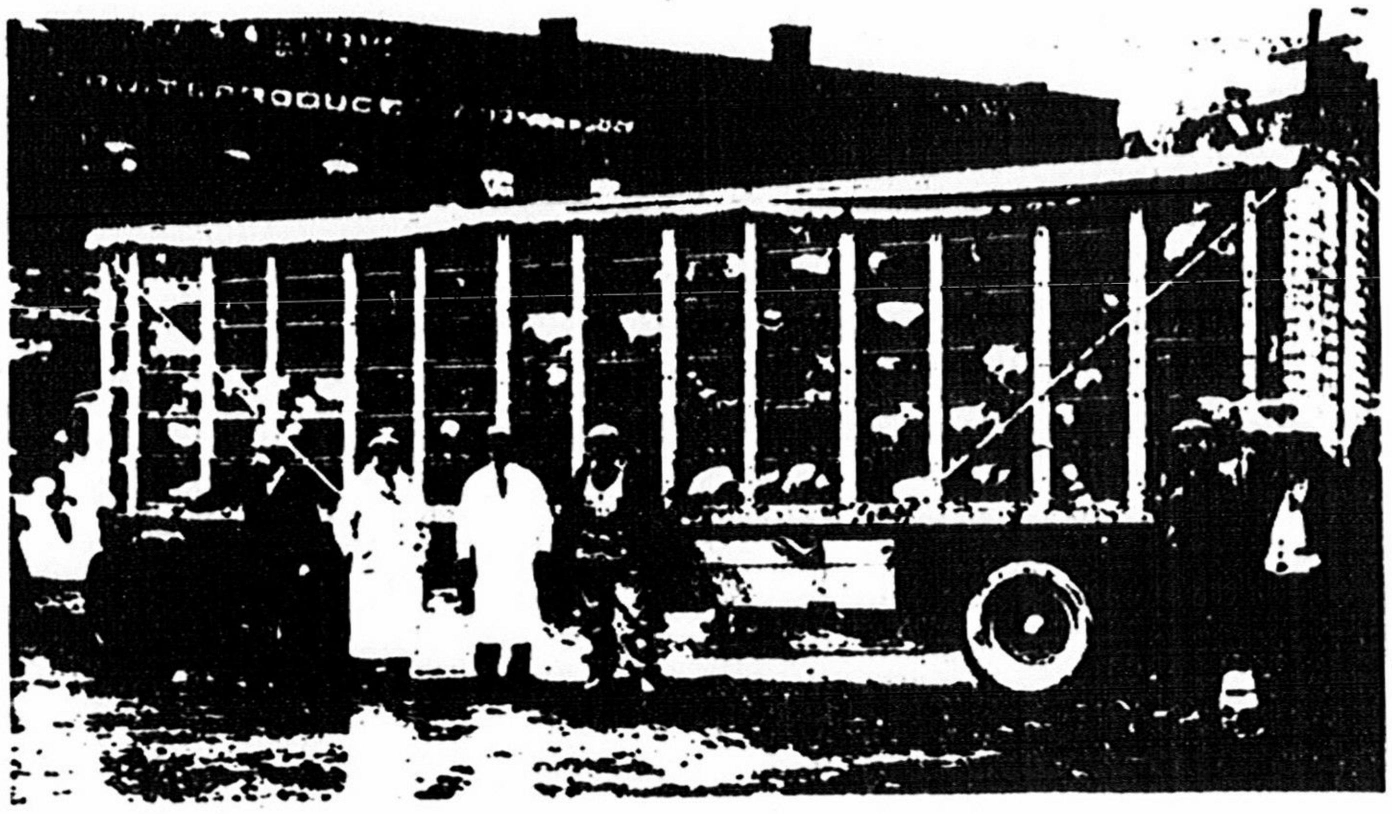
It is stipulated between counsel that the attached is a true copy of an article entitled "Welding of Frames, etc." which was published November 21, 1931, in Automotive Industries, which is a journal of good standing in the automobile industry.

T. A. HOSTETLER,
Solicitor, U. S. Patent Office,
For Defendant.
JOS. H. MILANS,
Attorneys and Counsel for Plaintiff.

—— ——,
Counsel.

January 4, 1934.

(Here follow diagrams marked pages 70, 71, 72, 73, 74 and 75.)



and After!

This motor truck and good roads brought a South Dakota poultry farm 1500 miles nearer the ultimate consumer. The farmer has made his mediocre farm a highly profitable venture through this single effort

6281. Metropolitan Engineering Company,
vs. Appellant,
Conway P. Coe, Commissioner of Patents.

garden, (2) intermediate, and (3) long distance:

(1) The local and market garden district embraces a territory of 5 to 15 miles from the market. Since little distribution within these districts was ever made by railroad, and the products usually do not go through the regular marketing channels, such territory is excluded from this study as much as possible. About some cities the use of the motor truck has caused an extension of market gardening to as far as 50 miles from the markets, but such local, intensive production is limited in western New York to about 15 miles from the cities. Fruits and vegetables in these districts are conveyed almost entirely by farmers in their own trucks and are sold in farmers' markets or peddled to retailers and consumers. At Buffalo a considerable quantity of market garden produce is sold by commission merchants.

(2) The intermediate district extends from the market garden territory to about 75 miles from the market. Production in this district is extensive, with some attention to the needs of the nearby market. Usually about one-half of the motor truck movement is by farmers themselves, the movement decreasing as the distance from market increases.

(3) The long-distance district, which is arbitrarily placed at greater than 75 miles from the market, is characterized by almost exclusive hauling by truckmen instead of by farmers.

The Ohio Department of Agriculture reports that the gradual development of high speed truck and expansion of hard surfaced highways are exerting a marked influence on methods of marketing and transportation. In the Columbus market this has resulted both in an increase in the arrivals by truck and in the area from which supplies are drawn.

During 1930, 58 Ohio counties and seven states outside Ohio furnished supplies in motor trucks, amounting to 10.3 per cent of total receipts. This represented 11,320 truck loads, 272 of them from other states. The average net weight per truck was 1788 lb. and the average one-way haul per truck was 27 miles.

"Refrigeration," the department states, "may in the near future expand even further the territory furnishing supplies in trucks on so-called 'local' markets such as Columbus."

The area within which roadside markets may be profitably operated around consuming centers has been expanded by improved roads from a distance of 10 to 15 miles to 25, 30, and sometimes as high as 50 miles, particularly on heavily traveled, through routes.

The outlet provided by the roadside market has also widened the scope of produce offered in that the production of adjacent farms may be combined for sale under one management.

Last year nearly 1,500,000 school children were carried to 16,500 schools by 48,775 buses over 451,000 miles of highway. Thus improved educational facilities for farm children have been made available through improved highway communication.

The motor vehicle is an essential piece of farm equipment today. Many owners have wholly discarded light horses and vehicles for road travel. Then the increased expenditure for motor vehicle operation, the correlation between a large automobile registration and high income and farm value would seem to add further proof.

Dr. T. C. Atkeson, while Washington representative of the National Grange in 1926, expressed this thought before the Interstate Commerce Commission in a hearing on Docket 18,300:

> "The people on the farms of the United States are concerned about the building of highways and their use in highway transport for both economic and sociological reasons. This is a consideration which is of national importance, for without this opportunity for freedom of movement, that is, equal transportation facilities, American men and women can no longer be expected to remain on the farms."

Perhaps, however, one of the most important reasons for a continued and widened use of the motor vehicle by the agricultural population rests in a sound philosophy which looks upon the motor vehicle as taking the place of the horse and wagon of yesterday.

(See Tables on Pages 810-811)

Table II

Farm Registration of Motor Vehicles

	1930	1920
Total farms	6,288,648	6,448,343
Automobiles	4,134,685	2,146,362
Number of farms reporting	3,650,003	1,979,564
Motor trucks	900,385	139,169
Number of farms reporting	845,335	131,551
Tractors	920,395	246,083
Number of farms reporting	851,457	229,332

Welding of Frames May Introduce

6281. Metropolitan Engineering Company, Appellant,
vs.
Conway P. Coe, Commissioner of Patents.

A completely welded frame cannot be achieved without further fundamental data. Who will furnish them? + +

DURING the past year something like $200,000 has been spent in the automotive industry in investigating the possibility of welding chassis frames instead of riveting them. While no company apparently has advanced sufficiently far to contemplate immediate production of completely welded frames, the interest taken in the subject warrants a discussion of its future possibilities.

If frames are to be welded the problem may be attacked along two different lines, as follows:

1. Replacement of riveting by welding in a frame of conventional design.
2. Research on new frame designs specially adapted to welding.

Practically all companies that have done experimental work on welded frames have followed the first plan, and the results have not been very satisfactory. The engineering departments of a few companies have been considering the second plan, but generally they have been handicapped by lack of knowledge of the fundamentals involved. It appears at present that frame welding in 1932 passenger-car models will be limited to a cross-member here or there for greater rigidity.

Most of the interest in frame welding at the present time centers around the subject of rigidity, although there are other considerations also. The objects generally aimed at may be listed as follows:

1. A more rigid joint between conventional side- and cross-members.
2. A more rigid frame structure by departures from conventional cross-member design permitted by welding.
3. Reduction in the cost of material due to welding a conventional frame.
4. Reduction in the cost of material due to adapting frame design to welding (unconventional frame).
5. Increased rigidity at no extra cost for material, or equal over-all rigidity with less material.
6. Increased rigidity due to complete alteration of frame design or in frame parts production.
7. Economy of welding as compared with riveting.
8. Reduction of internal stresses in frames set up during assembly as a result of inaccurate size control of cross-members, etc.
9. Possibility of accurately controlling the rigidity characteristics of the frame structure.

No attempt has been made here to list the items in the order of their importance.

Opinion based on the experiments of different companies is far from unanimous that the mere substitution of welding for riveting produces increases rigidity. There is also a difference of opinion as to whether such an increase in rigidity would prove desirable. Some typical experiences may be cited:

Company A substituted arc welding for riveting. No apparent gain in rigidity resulted. Side rails in this frame were rather heavy, cross-members fairly light.

Company B substituted spot and arc-welding for riveting. Torsional tests of the frame alone indicated an increase in rigidity. With the body mounted, however, there was apparently a *decrease* in total rigidity.

Company C substituted butt and arc welding for riveting. There was a con-

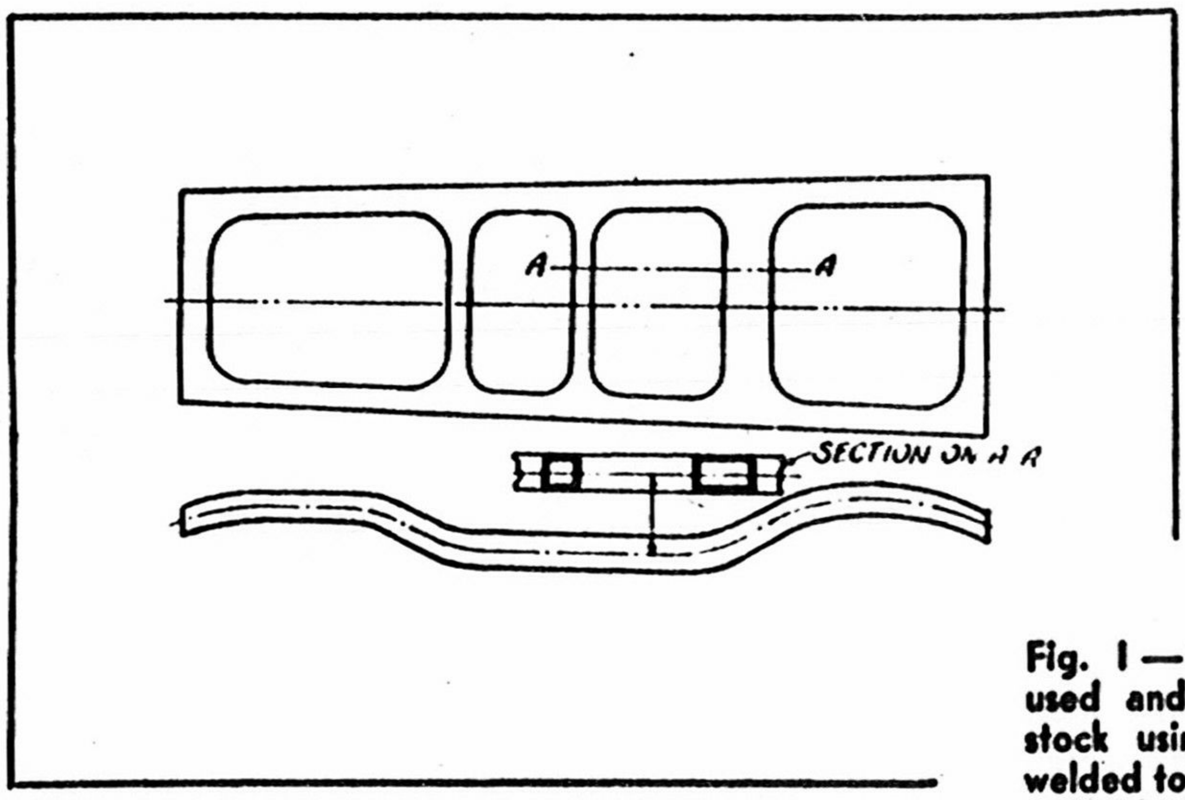


Fig. 1 — Thinner stock might be used and stamped out of sheet stock using only two stampings welded together in a complete box at the horizontal center line of the material + + + + +

Greater Chassis Rigidity and Effect Production Economies

6281. Metropolitan Engineering Company,
vs. Appellant,
Conway P. Coe, Commissioner of Patents.

by Athel F. Denham

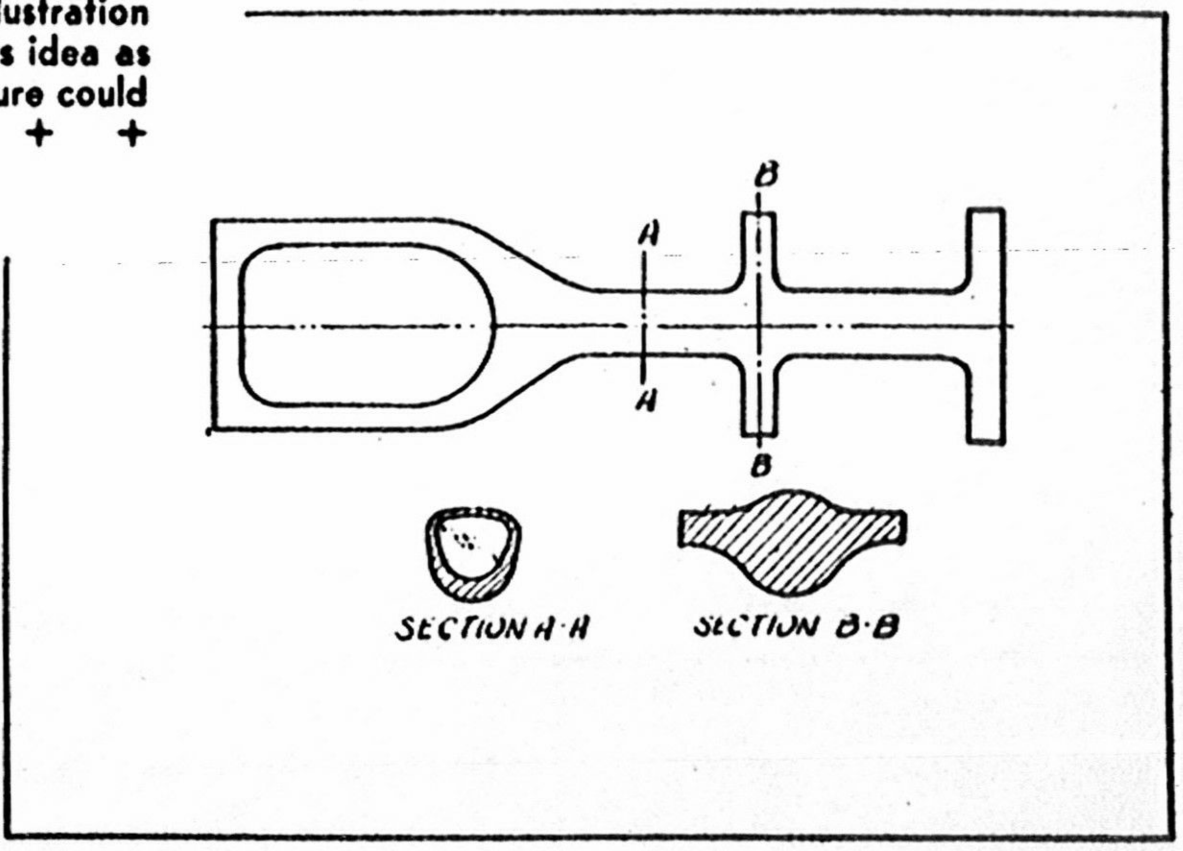


Fig. 2—The total elimination of side rails might simplify the problem. This illustration shows one engineer's idea as to how such a structure could be achieved + + +

siderable gain in rigidity both of the frame alone and of the whole car. However, when subjected to road tests frame breakage almost immediately followed.

While the types of welding used are mentioned here, it does not necessarily follow that the types of welds bear a definite relationship to the results that may be expected.

These experiences show that the result of experiments on one specific design cannot be applied directly to other designs. For instance, it is quite probable that in the frames of Company A, the riveted joints were excessively rigid as compared with the frame as a whole, so that what flexure occurred was in the cross-members themselves. It is also possible that inexperienced welders or inadequate equipment produced a weakened joint, either through a poor weld or through weakening of adjacent frame sections.

In the case of Company B, the results suggest that welding itself produced a more rigid joint between cross-members and side rails, thus shifting the weakest or most flexible points to other parts of the frame, which bear a more vital relation to the body.

The writer believes that this affords further support for the contention made in these columns some time ago that improvements in frame design can be achieved only when considered in relationship to the car as a whole.

In the case of Company C a decidedly different picture presents itself. Here, evidently, the frame flexed mainly at the riveted joints. When judged on the basis of the usual frame tests, the original frame was quite satisfactory from a rigidity standpoint.

However, when the frame was welded the strength of the joints was materially increased—and this increased the normal stresses at other points of the frame sufficiently to cause breakage. On paper the riveted structure apparently was just as rigid at the joints, if not more rigid. Assuming that overstressing of the frame did not occur as the result of welding, the conclusion is logical that some "give" was present in the riveted joints.

Although many engineers decry the belief that there is a slight motion under the rivet heads in even the most poorly riveted frames today, they do admit the possibility of flexure in the material around the rivet. This motion, however slight, may prevent frame breakage in many cases.

The experience of manufacturers who have attempted to weld conventional frames inevitably strengthens the belief that a certain amount of flexibility in the frame structure is necessary. Whether there should be a uniform distribution of "flexibility" or whether it is more a matter of purposely and definitely selecting the sections or joints which are to "give" to prevent breakage is an open question.

Departure in cross-member structure not easily feasible with riveted structures, but possible with welding is a step which one or two manufacturers will probably take on their 1932 cars. This is not as much of a problem as if the whole frame were to be welded. Complete box section cross-members, or tubular members flaring into bell-mouths stamped into the side channel web, are examples. When used at critical points in the frame structure they would most likely increase the rigidity at that section, transferring such flexure as occurs to parts of the frame bearing a less vital relationship to the rigidity characteristics of the car as a whole.

6281. Metropolitan Engineering Company,
vs. Appellant,
Conway P. Coe, Commissioner of Patents.

During the past year about $200,000 has been spent in investigating the possibility of welding chassis frames instead of riveting them + +

Leaving the question of rigidity for the minute, let us consider the economies of the proposition. Some material may be saved in a welded frame by the elimination of overlapping joints, gusset plates, etc. A greater saving may be effected by the use of lighter side rail stock in the welded frame, theoretically without loss of rigidity.

The thinness of frame stock used today is largely limited by the ability of the material to carry the rivets, with their localized stresses. Welding, properly applied, might result in better distribution of these stresses at the joint, especially if arc, butt, or flash welding were used. From this particular angle, spot or projection welding does not appear to offer as much promise, although the writer believes there is a definite place for even these types of welds in a frame structure if welding were to be substituted for riveting throughout.

Just how much the saving in material might amount to would depend largely on the individual frame. Some time ago the sales cost of frames was made up (on the average) of about 70 per cent material cost and 30 per cent labor, profit and overhead. This proportion may have changed somewhat of late, owing to lower material costs, but improvements in press and riveting equipment have reduced labor charges and offset the decreased material prices, so that material still represents by far the major part of frame cost in large runs.

It is, of course, entirely possible that there would be no saving in material used. For instance, a manufacturer might take advantage of the possibility of using thinner stock in the side rails, to extend the depth of the web for increased rigidity. Again if frames were completely redesigned to obtain the maximum rigidity benefit from welding, there might be even an increased material cost. An example might be a frame stamped out of sheet stock, using only two stampings, welded together in a complete box form at the horizontal centerline of the material. Here there would evidently be considerable waste of material, where sections are stamped out of the frame sheets to provide clearance for the various chassis units, and for reduced weight. Where such sections are stamped out, of course, the inner edge would be turned down in the upper panel and up in the lower panel for welding together to form the box section. This is illustrated by Fig. 1.

Again, the adoption of welding may lead to rather radical departures in frame designs when sufficient knowledge of the fundamentals has been obtained. For instance, there is a rather widespread desire among engineers to experiment with the back-bone type of frame. A few years ago body designers were arguing for greater frame width—wider spacing between siderails. The industry followed. Today the body engineer knows that the idea has a sufficient number of disadvantages to offset possible gains, and in many cases an about-face has been made in the hope that the total elimination of side rails, particularly at the center and rear, might simplify the body maker's problems of body deflection.

Riveted structures do not appear to lend themselves as readily to this type of frame as welding does. Fig. 2 shows one engineer's idea as to how such a structure might be achieved. The center section at the rear is of the banjo type, inclosing the propeller shaft, while the horizontal extensions are for the purpose of carrying the springs, assuming the continuance of the use of semi-elliptics.

Whether or not the mere substitution of welding equipment for riveting machines would result in economies of manufacture appears to depend largely on the type of design adopted. Aside from the cost of welding equipment and the direct labor comparisons between welding and riveting alone, study of the economics of welding would have to include such items as material handling cost and parts production costs. A welded frame might easily be set up in a single jig, as is done in the case of airplane fuselages, and welded in one set-up, possibly resulting in lowered floor space requirements.

Item eight has been listed here merely to introduce one of the objections frequently made to frame welding that welding of cross-members to side rails may result in building up larger internal stresses in the frame than riveting, for a given variation in length of cross-members. This objection, the writer believes, does not hold, as it presupposes mere substitution of welding for riveting without corresponding changes in design. It is perfectly obvious that even if overlapping joints are used, welding allows for greater flexibility in parts size control, since it is no longer necessary to match up rivet holes. If overlapping joints are not used, internal stresses in the frame must be relieved providing flexibility at proper points.

This latter possibility seems to hold much promise, theoretically, but it is difficult to realize. To achieve the proper distribution of rigidity and flexibility in a given frame requires not only a far greater cooperation between frame, chassis, and body manufacturers than there has been heretofore, but also a further knowledge of the fundamentals of frame design, especially in relation to body structure.

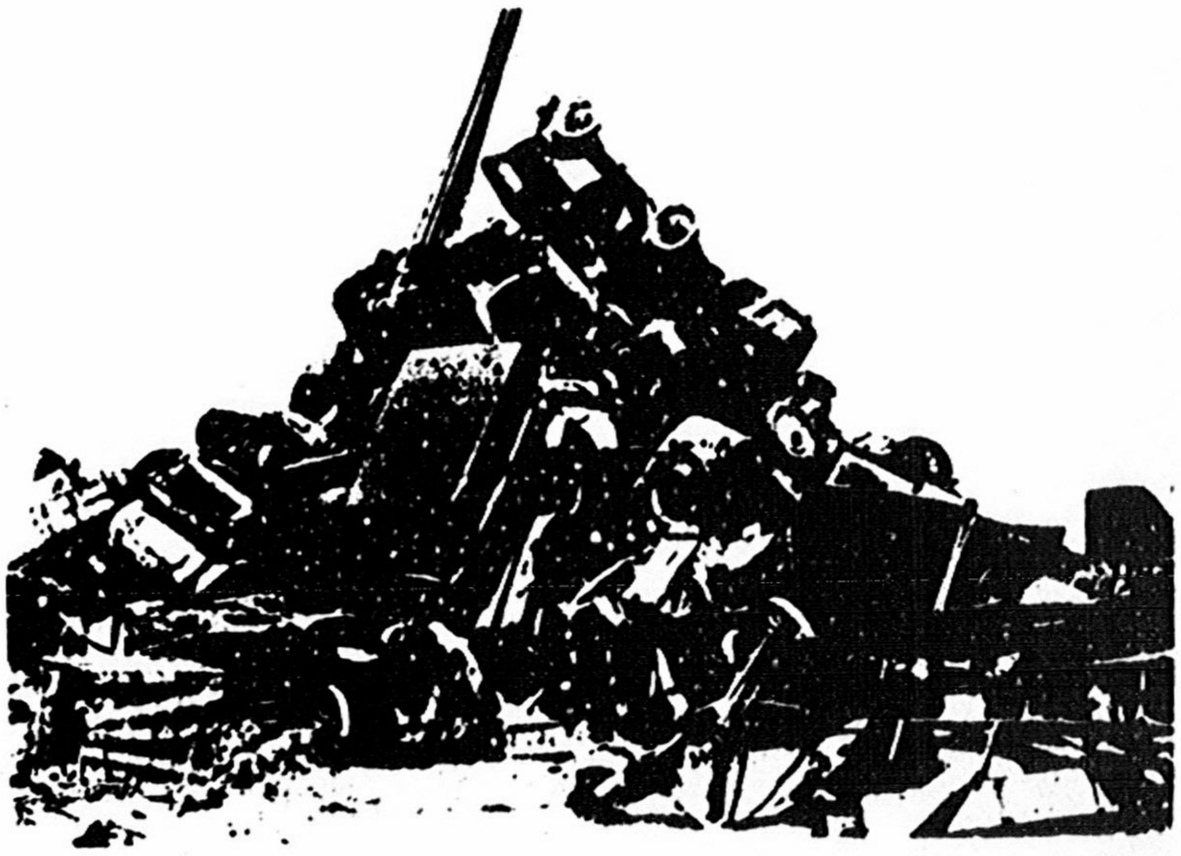
If welding is to be adopted, a further element of cooperation must be introduced—that of welding-equipment manufacturers.

The status of welding experiments to date shows little evidence of cooperative effort. Car manufacturers have been carrying the idea along almost entirely by themselves. Frame manufacturers also have carried on some work along these lines, while the welding equipment people have a fund of fundamental knowledge gained from their experience in structural work; buildings, bridges, railroad freight cars, etc.

(Turn to page 798, please)

Bonded Salvage Yards May Solve the N. A. C. C. Junking Dilemma

6281. Metropolitan Engineering Company,
Appellant,
vs.
Conway P. Coe, Commissioner of Patents.



Possibility of accepting certificates of demolition from authorized scrap merchants as basis for payment of bounty studied in Cobleigh report

THE possibility of salvaging old cars no longer fit for the road, for their value as scrap metal and reclaimed parts as a relief from the inconveniences incumbent upon the operation of the present Highway Safety Program, prompted the directors of the National Automobile Chamber of Commerce, upon advice of their sales managers' committee, to authorize the sending out of Mr. H. R. Cobleigh, of the chamber staff to survey the field with the thought of appointing official salvage yards whose certificates of demolition would be acceptable to those manufacturers participating in the plan in lieu of requiring that the car be cracked up in the presence of a factory representative.

As a result of this authorization, Mr. Cobleigh has recently completed a 3,500-mile trip during which he acquired a great deal of information relative to the possibilities of putting such a plan in operation, and as a result of which he is submitting to the N.A.C.C. a concrete plan.

The difficulties of the present plan, whereby the manufacturers set up a junking fund by setting aside a fixed sum for every new car sold a dealer, from which they pay the dealer a certain amount for breaking up an old car in the ratio of one scrapped car to each five new cars sold, arises from the fact that in order to maintain proper supervision, the factories have required that the junked cars be broken up in the presence of a factory representative. This has resulted in additional expense to the factory and considerable delay as well as expense to the dealer. Then too, the latter has found the process undesirable, as he has frequently had to hold the junk car in valuable storage space for considerable periods of time, has had to employ his own labor for cracking up, and has then usually had to pay to have the remains hauled away. Under this process of cracking up, parts were so destroyed that the car had no value to the junk man or auto wrecker. And, indeed, it has heretofore been the policy of factories to forbid the resale of any parts from the cracked-up cars. Thus after the car was cracked up it became a problem for the dealer to dispose of it.

Mr. Cobleigh proposes to meet this situation by setting up all over the country a number of official salvage yards who will issue certificates of demolition which will be recognized by participating members as sufficient evidence that the car has been destroyed to warrant payment of the Highway Safety Plan bounty. These yards would be bonded not to sell any cars or chassis, but would be permitted to sell reclaimed parts. They would be required, of course to accept all bounty cars offered them, but because of the permission to sell parts, would also be in a position to bid competitively against other salvage yards, scrap metal merchants, auto wreckers and junk yards for any other junk cars offered them. Under this plan factories would not have to keep sending their representatives around to witness the cracking up of cars for which they would pay the bounty, and dealers could sell these cars to the yards as soon as they were taken in in trade. This would obviate the costly storing, labor and disposal on the part of the dealer, and he could send in his certificate and collect his bounty as soon as the car had been sold. Furthermore, it would enable those manufacturers who have not been participating in the Highway Safety Plan because their volume was too small to warrant their sending representatives all over the country to enter into the plan.

The question of permitting the resale of reclaimed parts was one on which Mr. Cobleigh experienced some doubt before he started out on his survey. However, after examining closely the experience of the Cleveland Guarantee Auto Scrapping Co., which was organized about two years ago to scrap bounty cars for their scrap metal with the understanding that they not only not sell any cars but that they also not sell any parts, and interviewing dealers associations, salvage yards and scrap metal merchants at various points all over the country, he arrived at the conclusion that car scrapping without the sale of used parts could not be made a profitable undertaking. The Cleveland company lost last year almost exactly what it paid the dealers for old cars.

Furthermore, it has now become evident that permitting the resale of salvaged parts not only has no valid objections, but that it has actual advantages to all parties concerned—provided the used parts sold are guaranteed, which would be one of the stipulations of Mr. Cobleigh's plan. He says in this connection:

"A study under the direction of the N.A.C.C. Sales Managers Committee headed by R. H. Grant of General Motors, developed that the sale of used parts was not the evil it was supposed to be. Although it does prolong the life of cars still in owners hands, it at least makes them safer and it is sound economically to repair old cars with used parts.

"In the past year 84 per cent of the cars scrapped at Cleveland were five years old or older, hence the used parts that would have been available for resale would have been practically all for cars at least that old. The factories have learned that their sales of new parts for such cars are extremely small and are handled at a loss. Since owners can and do obtain satisfactory used parts much cheaper from the auto wreckers that have grown up everywhere it was seen to be fruitless to handicap official yards by insisting on the destruction of parts.

"From the owner's standpoint, it is extravagant to put a new part in a car five years old which has only two years of useful life left, particularly a non-wearing part.

"The automobile as an assembly has an average life of seven years but many of the elements in it have an indeterminate life, and to throw such parts away is wasteful. For the manufacturers to make enough of such parts to carry them on inventory for five years only to scrap a great part of them finally is likewise a waste. The dealer would not have them in stock. The owner would have to wait probably two weeks on an average to get them from the factory. The owner saves not only time but money when he can go to a responsible yard and buy a guaranteed second-hand part."

Under Mr. Cobleigh's plan, the seven dealers' cooperative yards now operating to salvage used parts would be among the first yards to receive official recognition. There are also a number of cities with a set-up similar to that in Cleveland all ready to go into operation, and these will also doubtless be appointed as soon as the plan goes into operation.

In other localities it would be necessary to scout out reliable yards who can be appointed to issue the required certificates of demolition. It is Mr. Cobleigh's plan, that yards should be appointed only on the nomination of the local dealers' associations, or where there is no association, on the nomination of a representative group of local dealers. He would also have most of the supervisory work done by the local dealers, as that would relieve the N.A.C.C. of a great deal of unnecessary routine as far as it is concerned. The yards must, however, in his opinion, receive their appointment from the N.A.C.C. as it is the members of that body who will have to honor the certificates issued by the yards, and they want definite assurance that the car for which they pay the bounty is actually removed from use on the highways.

Welding Frames Will Introduce Greater Chassis Rigidity

(Continued from page 790)

Each class seems to be rather jealously guarding the results of its experiments. Frame manufacturers apparently are worried over the possibility of having to scrap their extensive riveting equipment. Welding equipment suppliers hesitate to actively enter the field, which is probably due to inertia. Individual car manufacturers do not wish to have the knowledge gained from costly experiments become available to their competitors.

It is not the writer's intention to either promote or decry the idea of frame welding. The opinions as to problems involved and advantages and disadvantages given here are those of engineers who have interested themselves in the idea, generally to the extent of securing an appropriation from their companies to carry on experimental work.

It is the writer's opinion, however, that a completely welded frame cannot be achieved without further fundamental knowledge. The manufacturer who supposes he can merely replace rivets by welds in his existing frame is foredoomed to disappointment in the results achieved.

Magnificence on Parade—

Next week we will present some of the outstanding entries in the annual Salon, which opens in New York on November 29.

Here the crowning achievements of automotive design will be displayed by LeBaron, Brunn, Willoughby, Murphy, Judkins, Derham, Weymann, Brewster and other makers of custom bodies.

Several foreign makes will be shown with Duesenberg, Rolls-Royce, Stutz, Chrysler, Pierce-Arrow and Lincoln in this de luxe event of the automotive calandar.

—Next Week

6281, Metropolitan Engineering Company,
Appellant
vs.
Conway P. Coe, Commissioner of Patents.

76 Filed May 11, 1934. Frank E. Cunningham, Clerk.

In the Supreme Court of the District of Columbia.

In Equity.

No. 53,944.

Metropolitan Engineering Company, Plaintiff,

vs.

Conway P. Coe, Commissioner of Patents, Defendant.

Stipulation.

It is hereby stipulated and agreed, between counsel for the parties in the above-entitled cause, that at the time of the trial Exhibits 1 to 6, inclusive, were introduced, and that copies of said exhibits are attached hereto to be made a part of the Statement of Evidence.

JOSEPH H. MILANS,
Attorney for Plaintiff.
T. A. HOSTETLER,
Solicitor for Defendant.

—— ——,
Of Counsel.

Endorsed on cover: District of Columbia Supreme Court. No. 6281. Metropolitan Engineering Company, Appellant, vs. Conway P. Coe, Commissioner of Patents. United States Court of Appeals for the District of Columbia. Filed Aug. 9, 1934. Henry W. Hodges, Clerk.

FOR MR. CHIEF JUSTICE MARTIN

UNITED STATES
COURT OF APPEALS FOR THE
DISTRICT OF COLUMBIA

FILED OCT 17 1934

CLERK

United States Court of Appeals

for the District of Columbia

April Term, 1934

No. 6281

METROPOLITAN ENGINEERING COMPANY
Appellant

v.

CONWAY P. COE, Commissioner of Patents
Appellee

BRIEF FOR APPELLANT

Joseph H. Milans
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United States Court of Appeals

for the District of Columbia

April Term, 1934

No. 6281

METROPOLITAN ENGINEERING
COMPANY,
Appellant,
v.

CONWAY P. COE, Commissioner of
Patents,
Appellee.

BRIEF FOR APPELLANT

This is an appeal from a decree below dismissing a bill of complaint asking the Court to authorize the issue of a certain patent. The only findings of the Justice below are in his memorandum (p. 9) reading:

> "I agree with the conclusions reached by the Board of Appeals of the Patent Office."

The opinion of the Board of Appeals is found in the record commencing page 31.

The Invention

The invention is illustrated and described in the drawings, pages 25, 26, and the specification commencing page 35. In the drawings, Fig. 1 is a plan of an automobile chassis or frame having longitudinal side members 11 and cross pieces 12, 13 and 14. Fig. 7 is a perspective view of a similar frame, modified in details.

The side members are channel shaped with the web vertical and the top and bottom flanges bent inward.

The uniting of the parts is best illustrated in connection with the central cross brace 13. The brace 13 is also a channel. Its web 19 is identical in height with the web 15 of the side member. This brings its flanges 20 and 21 exactly in the planes of the flanges 16 and 17 of the side member (see Fig. 4). In bringing the parts together the end of the cross brace is shaped as in Fig. 5 with an extension 22 of the web from which the top and bottom flanges have been removed. Thus the extension enters snugly between the flanges 16 and 17, Fig. 4, and butts against the web 15 of the side piece; while the flanges of the brace butt against the edges of the flanges of the side piece.

There is no overlapping of any part of the brace with any part of the side piece nor with any third part such as splice plates, gussets or other common devices. The distinction in applicant's joint is its simplicity. Superficially, this makes it easier to say "no invention." In fact, it should count *in favor of* invention. Only a practical experimenter can know how many modifications and discards, hopes and disappointments have to be passed through before one arrives at a seemingly simple solution.

The advantage of this direct union of the parts is an increase in the strength of the joints and of the entire frame. Practically it means that the frame, designed for a certain maximum stress, is lighter than the old frames.

The claims are directed primarily to this style of joint. Claims 1 and 5 were taken as typical by the Board, and we may take them so here (though there are claims to details which we think merit special consideration and to which we shall refer later). Claims 1 and 5 are repeated for ready reference as follows:

> "1. A frame for automobiles having longitudinal members the cross-section of each of which is composed of a single piece of sheet metal bent to hollow shape with horizontal portions and transverse braces having *portions in the plane of the horizontal portions of said longitudinal members and butt-welded edge-to-edge thereto.*
>
> "5. A frame for automobiles having longitudinal members the cross-section of each of which is of channel shape with the flanges extending inward, and transverse braces having *vertical edges butt-welded to the inner faces* of the vertical portions of said channels, and having *horizontal portions in the plane of the flanges of said channels and butt-welded edge-to-edge thereto.*"

Brief History of Patent Office Proceedings

The inventor was granted a patent No. 1,723,518 August 6, 1929.

Believing the original patent defective in that the claims were unnecessarily restricted, the present application was filed to reissue the same with additional claims, some broader and some more specific.

The original patent contained six claims. These are the claims now on appeal (with slight changes in claim 3 and additional claims 13 and 14). The claims in the form in which they went to the Board of Appeals are claims 1 to 14 (pp. 45, 46, 47).

The original patent, with its drawings, specification and six claims, is inserted between pages 46 and 47.

The first letter of the Commissioner in the reissue application is inserted before page 47. The importance of it is in this,—that after an examination of prior patents the Examiner found the claims allowable, excepting Nos. 3 and 9. He reported:

> "Claims 1, 2, 4-8, 10 and 11 are allowed."

That letter from the Commissioner refers particularly to the Klopp patent which is now relied on very largely as a basis of rejection. Subsequently all claims were rejected on the theory that Klopp, taken jointly with a certain Schmidt patent, negatives patentability.

The Schmidt patent is in the same particular class of motor vehicle frames as the present application. It must have been before the Examiner in the granting of Murray's original patent and also in his first report on the present application, quoted above.

We shall point out substantial distinctions below. But we call attention here to the point that the later rejection constitutes a change of mind by the Examiner or else a transfer of the application to a less liberally minded Examiner. Whatever the circumstances, and the Commissioner has offered no evidence to explain them, they raise a substantial doubt of the soundness of the rejection. They weaken the presumption of rightness in the Commissioner's action, for the present case at least, and should ease the plaintiff's burden of proving the contrary.

Errors

The only error assigned specifically is that the Court erred in adopting the conclusions of the Board of Appeals. We are therefore sent back to the opinion of that Board for our discussion in detail.

By way of preface, we say that the Board's fundamental error was in considering the issue too broadly. They reason as if the claims cover all schemes for welding the members of an automobile frame instead of riveting them. Plaintiff's view is that the invention resides in particular details, in the shapes and positioning of the members and in the particular locations of the welds.

In a trade publication, Automotive Industries for 1931, covering a number of sheets inserted after page 48 of the record, there is an article entitled "Welding of Frames May Introduce Greater Chassis Rigidity," etc. It describes some efforts of the manufacturers to find a good way of welding frames instead of riveting them. The problems are classified under two general headings. Nine different objects aimed at are listed. Particular methods tried out by Companies A, B and C are described. Diagrams of two different systems are printed. The article concludes:

> "The manufacturer who supposes he can merely replace rivets by welds in his existing frame is foredoomed to disappointment in the results achieved."

On paper it may have seemed to the Board that the only question involved was that of welds versus rivets. In actual practice, the matter is much more complicated, as the above article relates. Plaintiff presents one particular scheme out of many that are conceivable.

Prior Patents

The Board relied on three prior patents, of the half dozen that had been cited by the Examiner. The three relied on (p. 32) and included in the record are of Schmidt, Chesnutt and Klopp. The principal reliance was on the Schmidt patent, the others being included to illustrate welding.

Schmidt.—This principal reliance of the Board shows a frame consisting of side bars 10 of channel shape and transverse braces 12 of inverted U-shape. These are so small as to enter entirely between the flanges of the side bar 10. On the end of each brace 12 there are small flanges, unnumbered, which are riveted to the web of the side piece 10. Also entirely within the flanges of the side pieces are triangular gusset plates riveted to the brace 12 and to the side piece top flange.

The Commissioner's argument below referred to the parts 11 of Schmidt's frame as transverse bracers. But this is inaccurate. They are called "end bars" by Schmidt, as distinguished from his "transverse bars or braces 12." And the Board in its decision recognized as braces only the U-shaped members 12. In any case, extra gusset plates are used for attachment to the side pieces. These gusset plates form the only braces at the ends.

There is no direct union to the side bars. There is no union of the parts in the plane of the flanges. The gusset plates on the inner faces of the flanges have less efficiency in stiffening the connection than plaintiff's joints in the planes of the flanges themselves.

In the case of Schmidt's transverse braces 12, the patent shows that these have their upper portions well below the flanges of the side members, with plates interposed between the under side of the flange and the top of the brace. And the only connection is by rivets to the webs of the side members. These connections are even farther removed from the efficient connections of plaintiff's frame.

If we were merely to weld the parts of Schmidt's frame together, we would still have a frame in which the bracing connection is in a plane *below* that of the top flanges and *above* that of the bottom flanges.

The difference may not be great on drawings. But in the actual construction it is of substantial commercial importance. Plaintiff's affidavit filed with his argument of July 16, 1930, shows that General Motors Corporations has taken a license involving a substantial fee.

Klopp is cited to show that it is old to weld the parts of a frame together. This is Klopp's only contribution. Klopp was cited in the application for the original patent and the claims were distinguished from it and allowed. He shows sills of box shape and braces of channel shape welded thereto. But the braces 4 are not of the full height of the sills 3 and there is nothing suggesting plaintiff's design of horizontal flanges projecting inward from the longitudinal members and having their edges welded to flanges in the same plane of the braces.

Chesnutt shows an L-shaped sill 9 one end of which is bent upward. In order to make the bend, the vertical leg of the angle is cut out at the corner as in Fig. 5, and brought together as in Fig. 6, and welded along the mitered line. This bent member has no part of it which constitutes a transverse brace. The transverse parts are separate members 10, 11 and 12, all of which are riveted directly to the longitudinal members. It is good only to show that welding of this sort could be accomplished for which, indeed, the Commissioner might as well have relied on common knowledge.

The Board agrees that in the principal reference, Schmidt, "the gusset plates do not lie in the plane of the flange 13, nor are the parts butt-welded together." They hold, however, that in view of the instances of welding in the other two patents, applicant's structure lacks invention.

Argument

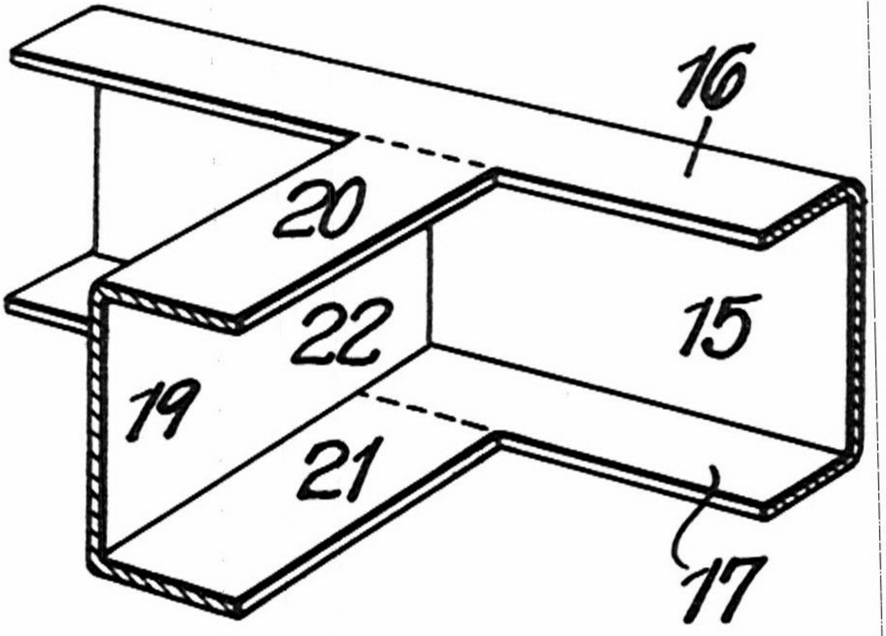
Plaintiff submits that his structure is not suggested by anything in the previous patents, separately or combined. To fairly reject a patent on such a combination of references it must appear obvious to use in combination features plucked separately from the individual patents. But you cannot do that here.

The mere welding of the parts of the Schmidt frame together would not produce a construction answering to the claims.

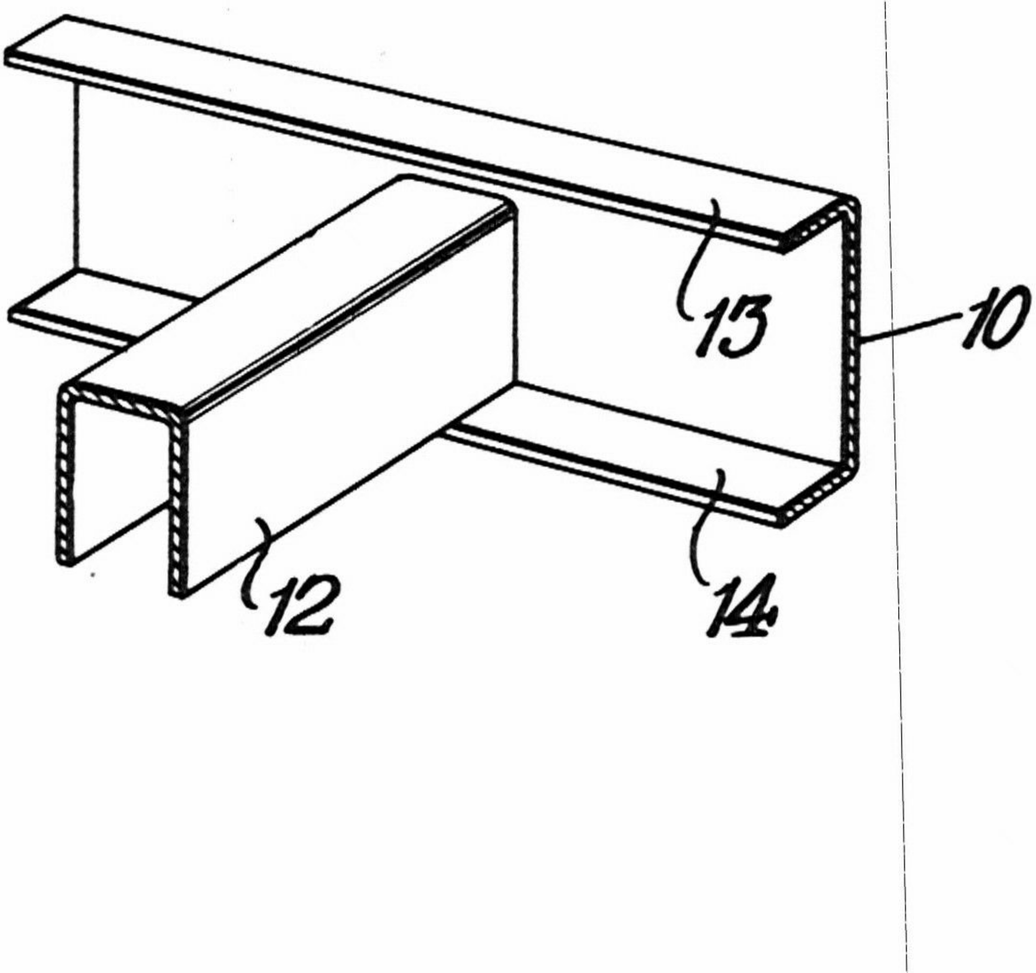
Even supposing you struck off the connecting flanges from the braces 12 and omitted the gusset plates, and butt-welded the end of the cross braces against the web of the side piece, the joints would look like the attached sketch entitled "Schmidt Frame Welded."

If you compare the above arrangement with that of Murray's Fig. 4, which is repeated here for convenience, you will see that Schmidt does not have the equivalent of Murray's top and bottom flanges 20 and 21 flush with the flanges 16 and 17 of the side piece. The top of

MURRAY FIG. 4.



SCHMIDT FRAME WELDED



Schmidt's cross brace 12 is well below the flange 13, and the bottom of the cross brace is above the flange 14. This is absolutely all that you would get by applying the weld of Klopp's Fig. 6 to Schmidt's frame.

The great advantage of applicant's frame is in the bracing of the joint by bringing the squared ends of the *flanges* of the cross brace against the edges of the flanges of the side piece. This makes a much stronger joint. A joint at the top and bottom extremities of the parts has much greater strength against bending strains than a joint in the middle only. There is an advantage too in having the top and bottom faces extending smoothly over both parts.

The Chesnutt patent is of even less value because it merely welds two parts of the same side piece together; the side pieces being attached to the cross pieces by rivets through overlapping portions, as at the top of Fig. 4, the "cross-pieces having their ends 11*c* lapped downward and riveted to the outer face of the upturned end portions 9*e* of the side pieces 9." (Specification, p. 1, l. 72.)

(Commissioner's counsel abandoned the cross pieces 12 of the Schmidt patent and retreated to what Schmidt defines as "end bars 11." This is not the sort of brace to which the claims are directed. The frame is shallow at this end and needs little transverse strength. The joint is not the butt-joint to which the claims refer, the meeting line being at an angle to the parts so that they tend to slide obliquely on each other under lateral strain. A direct weld here could never take the place of the splice plate.)

You cannot by any logical process develop the prior patented constructions into that which applicant is claiming.

(1) All the claims (except 3 and 9) include the flange arrangements referred to above. Claims 1, 2, 4, 7, 10 and 11 are directed broadly to the location of the welds in the planes of the top and bottom flanges.

This particular location of the weld in the plane of the top and bottom flanges means not only a frame that can be economically built. It means also a frame which is stronger than the old types for a given weight of metal. Not only does the invention eliminate the old rivets and splice plates which mean extra weight and eliminate the weakness of rivet holes which engineers always take into account and compensate for by extra metal, but it provides a joint of the highest efficiency by making the actual connection at the points farthest removed from the neutral axes of the parts. The location of the connections is the most important feature of the structure.

(2) Claims 5, 6 and 8 are based on the same feature, with the additional provision that the ends of the brace are butt-welded to the vertical faces of the side members.

(3) Claims 12, 13 and 14 have been inserted to present a further distinction from the Schmidt patent in defining the transverse braces as "located at an intermediate point in the length of the frame." These claims, therefore, refer to *real braces as distinguished from mere end ties*. Plaintiff's intermediate braces are comparable only with the braces 12 of the Schmidt patent. These intermediate braces besides their differences in function have the difference in construction which the Commissioner points out—they are cut square across the ends instead of being mitered. The problem of making connections for such intermediate braces is very distinct from that of end ties at a point where the side members are cut off. For such transverse braces it is

entirely a new idea to have flange members which lie in the plane of the flanges of the side members.

The Schmidt patent by the distinction which it makes between end members and intermediate braces inhibits rather than suggests the idea of making them alike in any particular respect.

The complete combination of each of the above claims is not suggested in any fair putting together of the references.

It is more correct to say that the invention, being disclosed to the Commissioner, has suggested the search and artificial building up of an anticipation from these patents. And even when they are combined in any natural way, we do not have the combination claimed, neither identically nor in substance.

(4) Claims 3 and 9 are for a different detail, the bracket shown in Figs. 12 and 13, which has a projecting portion 44 for a step or similar support and which is mounted by welding its inner edges to the flanges 16 and 17 of the side members. The Commissioner has to go very far afield to call the end member 11 of the Schmidt patent a "bracket." This end member is not a brace in the ordinary sense. It is not a bracket in any sense of the word. For the reasons stated above, it does not meet the provisions of the claims that it should have edges butt-welded to the flanges of the side member; nor is there anything in the other patents cited which would suggest such a construction.

While these claims are of less importance than the others, they nevertheless have commercial value. They should not be lumped with the others. The structure is completely novel as well as useful. It seems to us that their rejection has been merely a matter of momentum. The Board having damned the other claims was not able to stop before running over these two also.

We bespeak separate careful consideration of them.

Conclusions

In conclusion we need only repeat:

1. The claims are for constructions which are specifically new and particularly in the locations of the joints.

2. This novel feature makes a stiffer and a more economical frame.

3. The improvement is not as the Commissioner holds, in substituting one common securing means for another. It is in redesigning the ends of the braces, particularly the intermediate braces, in locating the joints in the planes where they have maximum efficiency and in using welding where it is best adapted to secure maximum efficiency.

4. The action of the Commissioner in allowing claims 1, 2, 4 to 8, 10 and 11 is highly persuasive of invention. At the time of that action, the Commissioner had before him the same patents which he subsequently held to anticipate these claims.

Respectfully submitted,

Joseph H. Milans,
Attorney for Appellant.

Usina & Rauber,
Of Counsel.

Washington, D. C., October 13, 1934.

FILED [illegible]

No. 6281

In the United States Court of Appeals for the District of Columbia

METROPOLITAN ENGINEERING COMPANY, APPELLANT
v.
CONWAY P. COE, COMMISSIONER OF PATENTS,
APPELLEE

APPEAL FROM THE SUPREME COURT OF THE DISTRICT OF COLUMBIA

BRIEF FOR THE COMMISSIONER OF PATENTS

T. A. HOSTETLER,
Solicitor United States Patent Office.

In the United States Court of Appeals for the District of Columbia

No. 6281

METROPOLITAN ENGINEERING COMPANY, APPELLANT
v.
CONWAY P. COE, COMMISSIONER OF PATENTS,
appellee

BRIEF FOR THE COMMISSIONER OF PATENTS

SUBJECT MATTER OF THE APPLICATION

The application for reissue of appellant's patent No. 1723518 discloses a chassis frame for an automobile. It comprises longitudinal side members 11 each made from sheet metal bent to provide a central vertical portion 15 and parallel horizontal flange portions 16 and 17 at the top and bottom. These members are connected by transverse braces 12 and 13 which have similar vertical and horizontal portions 20 and 21. The horizontal portions of the side members and the transverse members lie in the same plane and are butt welded edge to edge as shown in dotted lines in Fig. 4. The vertical portions 15 and 19 of the side and transverse members, respectively, are also welded together. A bracket 44 of sheet metal is welded to the edges of the horizontal portions of the side member as shown in Figs. 12 and 13.

THE REFERENCES

The patent to Schmidt, 924941, discloses a chassis frame with side members 10 with inwardly extending top and bottom flanges. Transverse braces 11 have upper and lower flanges in the planes of the respective side members. The ends of the transverse members 11 and side members 10 are mitred and butted against each other. They are then held in place by gusset plates which are not numbered. This patent also shows a structure in which there is a union between the ends of the braces 12 and the vertical portions of the side members 10 and also a union between the horizontal portion on the braces (gusset plates) and the flanges 13.

The patent to Chesnutt 991137 (R. 22) discloses a vehicle frame composed of side members 9, the ends 9e of which are bent upwardly as shown in Figs. 5 and 6. To do this a notch 9c is cut in flange 9b and end 9e is then bent upwardly and welded on the dotted line 9d. The two side frame members are then connected by transverse members 10 and 12. The weld 9d is a butt weld.

The patent to Klopp 1149069 (R. 15) discloses a vehicle frame composed of side members 3 of channel form connected by channeled transverse members 4 which are welded to the side members, as shown in Fig. 6 and as stated in the Klopp specification, lines 47 et seq.:

> * * * The channeled metal frame 1 comprises channeled metal sills 3 and channeled metal cross supports 4 welded thereto, thereby constituting a channeled metal wagon bed frame made practically of one piece of channeled metal material.

It is further stated, page 2, lines 4 et seq., that:

> The cross supports on the wagon bed are preferably welded in position to the sides of the metal sills and are thereby secured against any joints breaking on account of weak bolts, which is so often the case with the wooden beds where the bolts are used. Thus this feature overcomes any liability of the wagon bed spreading due to a bolt breaking.

THE GROUNDS OF REJECTION

All of the claims stand rejected. The grounds of rejection are fully explained in the Examiner's Statement (R. 27–31). The rejection of the claims by the Examiner was affirmed by the Board of Appeals in a decision (R. 31–34) which again states the grounds of rejection.

Claims 1, 4, 7, 10, 11, 12, 13, and 14 cover the combination of the longitudinal side members and the transverse members and include the limitation that the horizontal portions of the members, that is, the flanges, are butt welded edge to edge. Claims 2, 5, and 8 include the additional limitation that the vertical portions of the members are welded together. These claims may be considered together. It is believed that no invention is involved to weld the ends of the transverse braces in Schmidt to the side members. Brace members 11 have the flanges thereof in the planes of the flanges of the side members. They are then secured together by gusset plates. In view of the teachings of Klopp and Chesnutt, it would be merely a matter of choice to weld this joint. Schmidt also extends the ends of the brace members 11 into the channels of the side members until they abut the vertical faces thereof.

It is also believed that no invention would reside in attaching the members 12 of Schmidt in the same manner to the members 10. It is true that the gusset plates do not lie in the plane of flanges 13, nor are the parts butt-welded together. However, if welding is used it would be obvious to arrange the gusset plates in the plane of the flange. Butt welding has come into such common usage that it is difficult to see that any invention can possibly reside in resorting to this well-known expedient. The welding of the ends of the braces to the vertical portions of the side members is fully set forth in Klopp, Fig. 6. This patent also suggests the arrangement of the flanges of the side members and of the transverse members in the same plane and connected together in his Fig. 3. The transverse members in this figure are the end bars, but they would still suggest to a skilled mechanic the advantage of connecting transverse braces to the side members in a similar manner. Abutting side flanges are also shown in Klopp's Figures 4 and 5.

Claim 6 does not state how the parts are connected. Therefore they might be welded, rivetted, or bolted or held in any other well-known manner.

Claims 3 and 9 include the bracket welded to the edges of the flanges on the side bars. The term "bracket" has a broad meaning. It would include the transverse members shown in Schmidt or Klopp.

ELECTRIC WELDING—BUTT WELDING

The art of electric butt welding is approximately fifty years old. The Supreme Court of the United States in holding claims for spot welding invalid in *Thomson Spot Welder Co.* v. *Ford Motor Co.*, 265 U. S. 445, quotes with approval from the decision of the Court of Appeals as follows:

> The art of electric resistance welding was old and far advanced in 1903, when the Harmatta patent was applied for. Prof. Elihu Thomson * * * was a pioneer in that art. In 1886 he obtained process and apparatus patents * * * for so-called "butt welding", which involved the uniting of the abutting ends of metal wires, bars, etc., by applying heat at the joint and the adjacent surfaces by means of electrodes, and pressing the two pieces together when heated to welding temperature. There was here true

> resistance welding, with pressure of the parts involved, although the electrode did not exert the welding pressure. In 1889 Thomson obtained a patent * * * for electric riveting, which involved the heating of the rivet when in place by means of a current passed through it by the use of electrodes, under pressure thereon, the effect being not only to swage the rivet and weld it to the adjoining metal, but apparently (when desired) to weld together, in part at least, the portions of the plates immediately adjoining the rivet. In 1891 Thomson obtained a patent * * * for what is called "lap-welding." While the specification states that the invention is specially adapted to the welding of the overlapped edges of plates, it * * * expressly includes "welding together strips, sheets, plates, or bars of metal where it is desirable to form a joint of considerable length."

As stated by the Supreme Court in that decision:

> Welding is the art, practised immemorially, of uniting two pieces of metal in one piece by heating those portions which are to be welded to a temperature at which they become plastic and then pressing them strongly together so as to effect a union; as exemplified by a blacksmith when heating in a forge the two pieces to be welded and hammering them together.
>
> The art of electric welding, which was invented in 1886, was well advanced when Harmatta filed his application, having been

> disclosed in various prior patents for uniting the abutting ends of metal bars, wires, etc., uniting the overlapped edges of metal sheets, plates, etc., and other purposes.

It is thus apparent that electric welding is now the common form of securing metal parts together and this Court will probably take judicial notice of the fact that electric welding has largely superseded riveting in metal structural work.

It should be noted that in Schmidt the upper flanges of the side bars are connected to the cross bars 11 and 12 through the intermediate triangular and quadrilateral plates, not numbered, as appears from the rivets illustrated in drawings.

In Chestnut, as shown in Fig. 4, the flange 11c of the crosspiece 11 is riveted to the side piece 9, 9e, and the end flange of side piece 9 is riveted to the body of the angle-steel crosspiece 10.

In Klopp, Fig. 4 discloses channel members the flanges of which abutt each other, and in Fig. 5 the flanges of the channel lie in the same plane and are held together by a bolt or rivet.

That appellant is not entitled to a monopoly of butt welding is too obvious to need any discussion. A more limited proposition is therefore submitted, viz: whether appellant has made an invention in substituting electric welding for rivets in frames for motor vehicles. The negative answer to that proposition is supported by the patent to Chestnut, 991137, May 2, 1911 (R. 22), and Klopp, 1149069, Aug. 3, 1915 (R. 15), each of which discloses parts of vehicle frames secured together by electric welding. It is thus apparent that appellant was not the first to utilize electric welding in the vehicle-frame art. It should be noted that while both Klopp and Chestnut disclose electric butt welding neither claim any novelty in that feature. Each of appellant's claims, except claim 6, recite the term "butt-welded." Claim 6, however, calls for "portions abutting."

As appears from the record, the examiner rejected in the reissue application the claims of the original patent. The claims of a patent are subject to reexamination when presented in an application for reissue under the authority of *McCormick Harvesting Machine Co.* v. *C. Aultman Co.*, 169 U. S. 606. If, however, an applicant elects to abandon the reissue application, all of the claims of the original patent remain in force.

In further support of this brief attention is called to the decision in *Elyria Iron and Steel Co.* v. *American Welding & Mfg. Co.*, 15 F. (2d) 111, 112 (C. C. A. 6), in which the Court in referring to the decision of the District Court, said:

> Judge Westenhaver, in a considered opinion, reached the conclusion that, in view of the prior art, the claims in suit are limited to the welding process; that whether or not Lloyd's complete process, hereinbefore stated, showed invention, the welding process disclosed did not; that that process was

merely the well-known butt welding; that Lloyd was not the pioneer in either that art generally or in the seam welding art; that his process is simply an application of heat—sufficient to fuse to the melting point—to the seam edges of the tube, and the application of sufficient pressure to weld them; that there is no patentable distinction between Lloyd's "melt" weld and the "electric" weld and "blacksmith" weld of the prior art; and, specifically, that there was no invention in substituting a gas torch for the previously known electric conducting rolls; and that this case falls within the decision in the so-called *"Spot Welder Case" Thomson Co.* v. *Ford Motor Co.,* 265 U. S. 445.

It is accordingly submitted that the decree of the Court below should be affirmed.

Respectfully,

T. A. HOSTETLER,
Solicitor for the Patent Office.

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